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THE

# NORTHWESTERN MILLER

*A Weekly Record of Current Milling Events, and Journal of the Flour and Grain Trades.*

VOLUME 15. NUMBER 26.

MINNEAPOLIS, MINN., FRIDAY, JUNE 29, 1883.

$2.00 PER YEAR. 5 CTS. PER COPY

## ADVERTISERS' DIRECTORY.

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REMEMBER

Our wish is to please you as nearas possible to your liking, so as to induce you to continue to favor us with your orders.

# WILLFORD & NORTHWAY,

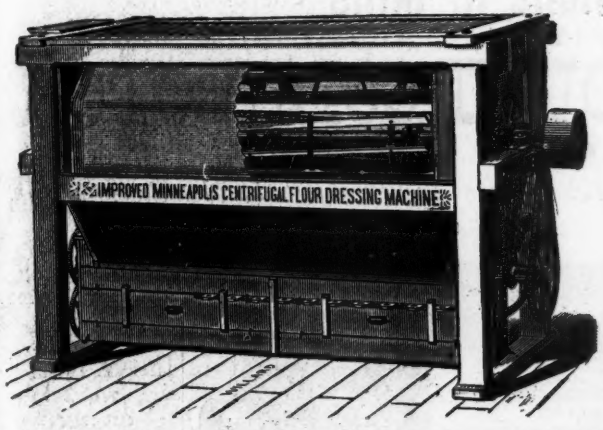
## MILL BUILDERS AND FURNISHERS.

CONSTANT USE HAS DEMONSTRATED THE SUPERIORITY OF OUR

## MINNEAPOLIS + CENTRIFUGAL + BOLTING + REEL

PLANS

And estimates furnished for complete new Flour Mills, or for remodeling Stone Mills to the Roller Process. Agts for Allis-Gray roller mill.




WE GUARANTEE IT TO BE

1. THE SIMPLEST IN THE MARKET, AND YET
2. THE MOST POSITIVE IN ACTION, THEREFORE,
3. THE MOST DURABLE, AND
4. LEAST LIABLE TO BREAKAGE OR DERANGEMENT, THUS GIVING
5. THE FINEST POSSIBLE RESULTS WITH LEAST WEAR.

→ABSOLUTE PROOF FURNISHED ON APPLICATION.←

*Every Machine Warranted and Thoroughly Tested Before Shipment.*

"OLD SOCKS" has struck a "cave of gloom" as all men will that think they can play their smart games on a lovely business widow, for it's a mighty cold day when such a one gets left. You see the way of it was, the young millwright who set the Centrifugal for "Old Socks" was sweet on the widow's daughter Mollie. So, when he called the next Sunday evening, the widow tackled him, and he told her all he knew. She was soon mistress of the situation, and her woman's wit quickly told her that a machine which would extract the flour from material that ordinary reels couldn't handle ought also to be excellent to dress flour on. Her Straight or Bakers' was a trifle specky and not quite as sharp as it ought to be, so she wrote WILLFORD & NORTHWAY for two Centrifugal Reels, a No. 2 for the crushed tailings, same as "Old Socks" worked, and also a No. 3 Centrifugal to dress her Straight flour on, as it comes from the chop reel. Well, sir, it was a success. Of course she matched the old man on the cleanness of offal, and cleared him at a jump 50c. a barrel on her Straight, which was clear and granular as one could wish for.

P. S. You can't see her now, she's out on the street bulling wheat again.

MORE TAFFY!

GLOBE ROLLER MILLS, PEORIA, Ill.
J. W. GIFT & CO.

*Messrs. Willford & Northway*: Gentlemen—We have started your Centrifugal and it works like a charm. It has raised our Low Grade fully 50c. per bbl. Yours etc.,

EVANSVILLE, Ind., June 16, 1883.

*Messrs. Willford & Northway:* Gentlemen—We are pleased to report that we started up the No. 2 Minneapolis Centrifugal Bolting Reel, shipped to our address some time ago for Messrs. Pepmueller & Brinius, Newburg, Ind., and the gentlemen as well as their head miller, were so well pleased with its workings that they settled for it inside of two hours from its starting, although they had the privilege of 30 days' trial.

Yours truly, E. F. SHATZER & CO., Milling Engineers and Millwrights.

***NONE OF OUR MACHINES WILL BE ALLOWED TO REMAIN IN USE UNLESS THEY ARE SATISFACTORY TO THE PURCHASER.*** In other words *their faithful performance and fine results are vouched for in every respect.* Too much time, labor and money (besides the wear and tear on our *brains, vast brains,*) have been expended on their development to allow any one of them to occupy a position where it will not do its own advertising perfectly.

We Offer to the Millers of the Country our famous "GOLD RIBBON" brand of

**Millers or millwrights changing mills over to the roller system, write us about our silk, for prices, etc. It will pay.**

## BODMER BOLTING CLOTH

**Millers who know the value of exact count in Bolting Cloth will do well to correspond with us.**

MANUFACTURED AND IMPORTED EXPRESSLY FOR OUR TRADE.

Our inspector rigidly requires the *best silk thread, great strength, full, square count, and evenness of mesh,* as we are well aware it is the only way to gain and keep the lead. The largest and best millers of the country are using our Gold Ribbon Bodmer Cloth and claim they can depend on its count when the best of other brands fail. Cloths made up with best silk twist and ticking, for 30 cents lineal foot of reel, and every cloth sent on its merits. Correspondence solicited, prices and discounts on application.

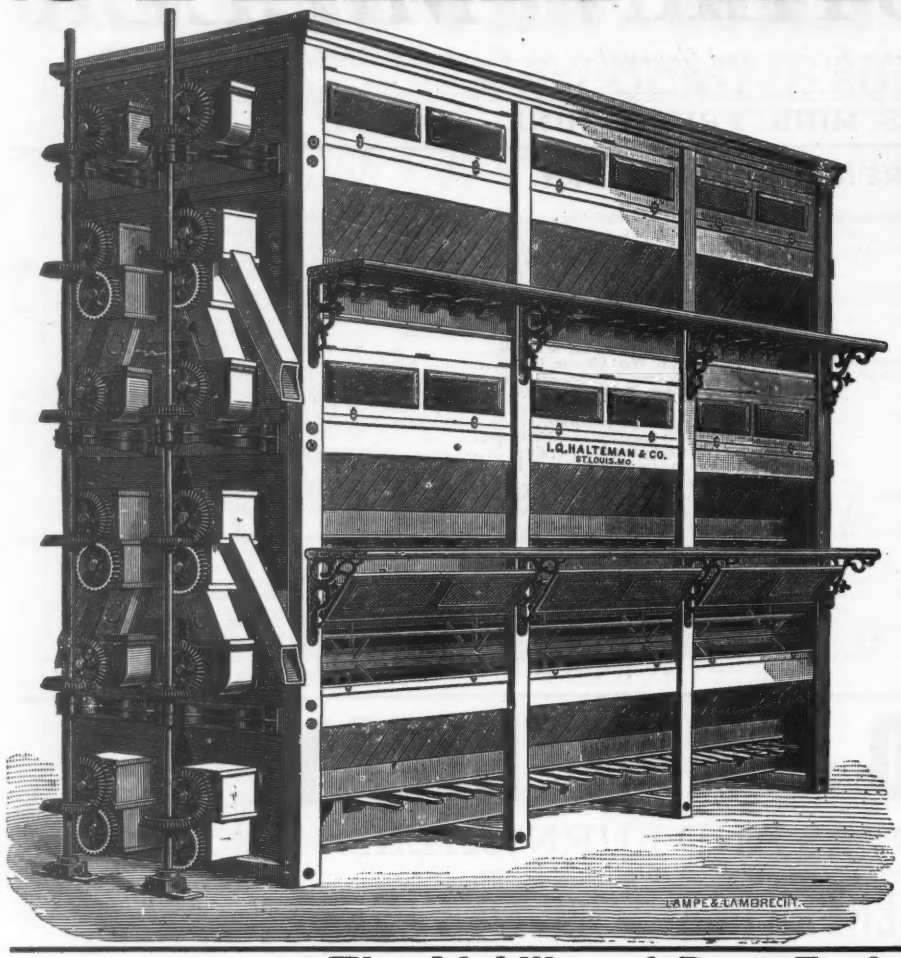
*To be continued in our next.*

**WILLFORD & NORTHWAY, Minneapolis, Minn.**

# STEAM ENGINES

FLOUR

# MILL MACHINERY




**And all articles, including Wood and Iron Work, Used in the Construction and Operaton of Flour Mills,**

MANUFACTURED BY

## I. Q. HALTEMAN & CO.

**We can adapt the Roller System to small mills as well as large, and can furnish approximate or close estimates to millers wishing to build new mills or remodel old ones, having experienced millers for that purpose.**

*Send for Illustrated Catalogue, Price and Pattern List.*

OFFICE AT WORKS:

*1605 to 1613 South 3d St. ST. LOUIS, MO.*

## The Liability of Dust Explosions in Mills

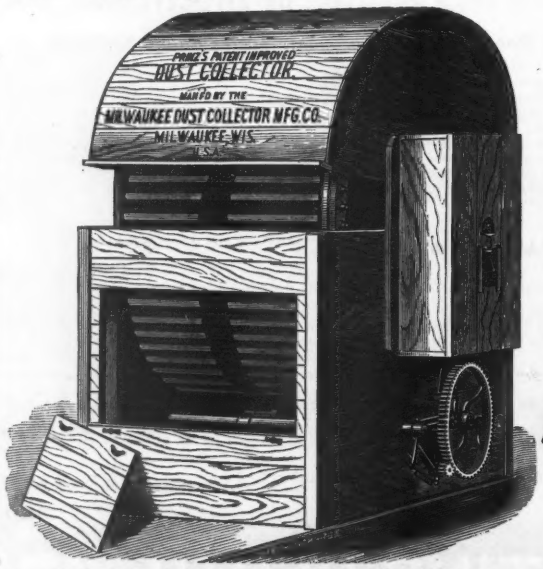
IS DONE AWAY WITH BY USING THE

# PRINZ PAT. IMPROVED DUST COLLECTOR

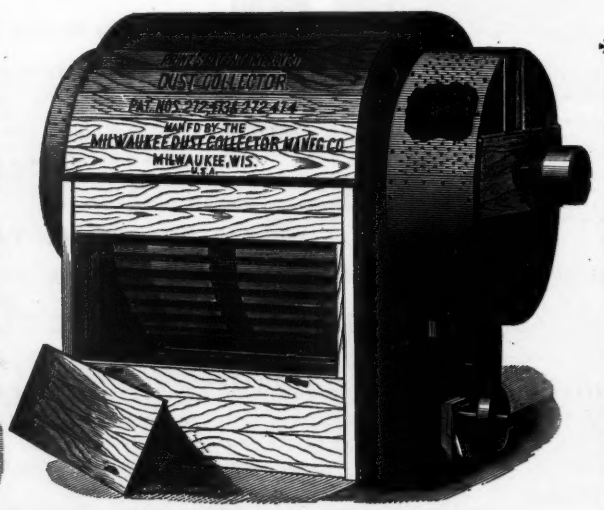
**IT IS AN ESTABLISHED SUCCESS.**

*The Back Draft Cleaning Mechanism, the only perfect device for keeping the cloth clean, exclusively used under the Prinz Patents.* **Beware of Infringements.**

Prinz Patents,
Nos.
272,473
272,474




**Prinz Pat. Improved Dust Catcher.**




**Prinz Pat. Improved Dust Collector with Fan Attachment.**

*CONSOLIDATED*
Licensees Patents,
Nos.
63,325
125,518
149,434
171,973
207,585
211,033
228,023
231,376
235,197
239,755
248,984
250,813
251,120
251,121
258,875
258,876
258,878
259,872
259,873

*One Thousand Machines in Successful Operation. Machines in steady operation for over two years. Selling at the rate of 200 a month.* ***FULLY GUARANTEED.*** *Manufactured exclusively under the* ***PRINZ PATENTS.*** *Also licensed under all patents now or hereafter owned and controlled by the combined licensees, Geo. T. Smith Middlings Purifier Co. of Jackson, Mich., Kirk & Fender, Minneapolis, Minn., and Sam'l L. Bean of Washington, D. C.* **See Special Notice.** *License under all patents furnished purchasers. Send for circulars and testimonials, All correspondence promptly answered. You will save time, money and labor by using this machine.* **Every Miller Should Have It.** *Remember it is the* ***BEST.***

**MILWAUKEE DUST COLLECTOR MFG. CO., Milwaukee, Wisconsin, U. S. A.**

THE

# STANDARD CENTRIFUGAL REEL!

## THE LATEST AND BEST.

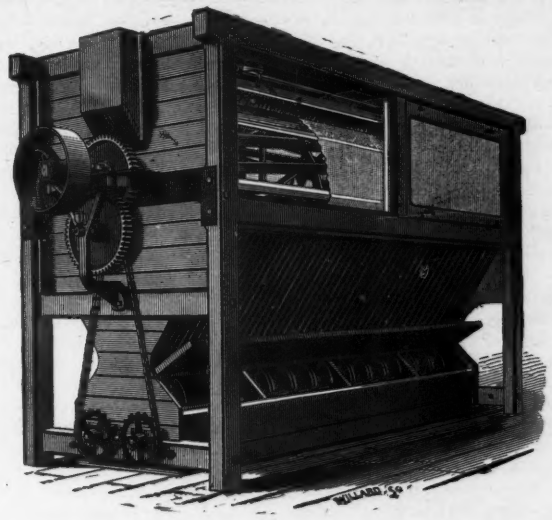
### WE CLAIM

*Greater capacity than any other reel of the same size.*

*The lightest running and easiest handled.*

*The best workmanship and the greatest durability.*

*More service from each square foot of cloth, and less wear of the cloth than any other reel whatever.*



### IT HAS

*A 10 sided reel on which the cloth can be stretched tight and kept so, which can not be done on a round reel.*

*A brush attachment which sweeps each side of the reel perfectly every minute. No other polygonat reel has, or can have, this necessity. It may be used or not, as the material being treated may require.*

This reel contains every feature which experience has shown to be necessary. It has the double conveyors side by side, and the material can be cut off every four inches if necessary. In case of a break in the silk this improvement allows the reel to be run until the miller has time to repair it. The brush can be regulated from the outside while the reel is in motion, to bear on the silk lightly, heavily, or not at all. The feed is automatic and air-tight, and there can be no center draft through the cylinder.

We are so confident of the correctness of our assertion that this is the best reel in the market that we will gladly ship it to any responsible party on thirty days' trial and let him be the judge as to its merits.

Office of the NORTHWESTERN MILL, Minneapolis, June 6, 1883.

Messrs. KIRK & FENDER, City.

Gentlemen:---In answering your inquiry as to how we like the Centrifugal bought of you, we have but to say that it gets "to the front" in better style than anything we have yet seen. It is giving us perfect and entire satisfaction. Yours respectfully, SIDLE, FLETCHER, HOLMES & CO.

FOR FURTHER PARTICULARS ADDRESS

## KIRK & FENDER, Minneapolis.

THE "SILVER CREEK"

# COCKLE SEPARATOR,

MANUFACTURED BY

*McNEAL & SPAULDING, SILVER CREEK, N. Y.*

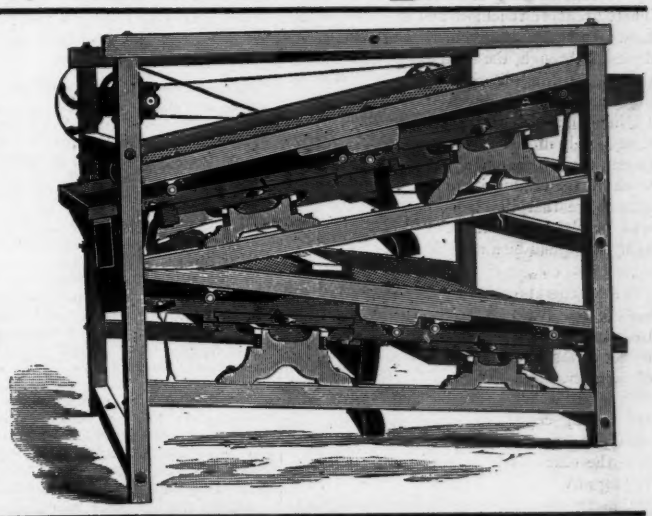
Also Manufacturers of

## Centrifugal × Reels, × Scalping × Reels,

Smut Machines, Cockle Separators, Open Screen Milling Separators, Warehouse Separators,

With Capacity from 100 to 1000 Bus. per Hour.

SEPARATORS FOR CLEANING CORN FOR GRINDING, Any Capacity Required.



## THE OLDEST MILLFURNISHING ESTABLISHMENT IN THE WEST

# THE NORTH STAR IRON WORKS CO.

MINNEAPOLIS, MINNESOTA.

## Machine Shop, Foundry, Boiler Shop

*Manufacturers and Dealers in Shafting, Pulleys, Gearing, Etc.*

## BOLTING CLOTHS

which we import directly from the manufacturers in Switzerland, and which *we warrant equal to any brand in the market,* cloths made up ready for the Reels in the latest improved manner, using the best of Ticking and Silk Twist. Please write for prices discounts and samples of cloth before purchasing elsewhere.

*MILL BUILDERS AND FURNISHERS* Plans, Specifications and Estimates furnished upon application for complete new flour mills or for remodeling old mills into new process mills. Also manufacturers of **Bolting Chests, Centrifugal Reels and Dust Catchers.**

**CHILLED IRON ROLLS, SMOOTH AND CORRUGATED, A SPECIALTY.** Correspondence solicited. Price lists and discounts furnished on application. Write for catalogue and pattern lists. **NORTH STAR IRON WORKS O.**

NORTHWESTERN MILLER

PUBLISHED EVERY FRIDAY MORNING,
BY C. M. PALMER.

At 25 South 2d Street, MINNEAPOLIS, MINN.
W. C. EDGAR, - - Business Manager.

$2.00 per year in U. S. and Canadas, postage paid
$3.00 per year to foreign countries, postage paid.

Agent for Great Britain, Mr. W. B. Newson, Mark Lane, London, and No. 2, Clayton Square, Liverpool, who will receive all subscriptions to the Northwestern Miller and communications for publication in its columns.

MINNEAPOLIS, FRIDAY, JUNE 29, 1883.

ON the following page will be found a brief resumé of the proceedings of the millers' national convention held in Chicago this week, compiled from special telegrams to the NORTHWESTERN MILLER. A complete stenographic report next week will supplement this, which arriving as this issue goes to press is necessarily brief. The election of Mr. J. A. Christian as president is probably the most interesting fact contained in the dispatches.

* * *

A VIEW of the convention a day ahead, leads one to the belief that it will be more of a social than a business affair. It is more like a picnic than the former red hot convention held in the Grand Pacific hotel. At that time, it will be remembered, there was the compromise with the Consolidated Co., which brought a great many people together who meant business. A view of that gathering a day before it came together, showed very plainly that there was blood on the moon. The patent lawyers were nervous and the clients were anxious. Now it is different. It is a hand-shaking affair and a quizzical look which means "what are you here for." At that convention, there was quite an exhibit of machinery which was surrounded by spectators, and explained by enthusiastic inventors and agents; at this time, except a few models, there is nothing of the kind to be seen. There are more machines and novelties in use now than at any time, but they are better understood through the medium of the milling papers. Milling literature has advanced as much as milling methods during that time. Business matters, which were formerly discussed only in the conventions, have, during recent years, become a part of the serious work of the milling journals. Now the indications are that that part of the work here will be dead matter. Altogether, it looks as if this would be a millers' social.

* * *

THE general gathering of representative millers from various parts of the country at the national convention, suggests to the observer various reflections on the characteristics of members of the trade in different sections. The spring wheat millers at the present time, are mostly capitalists—that is, furnish the money to run their mills, and perhaps overlook the office work, besides looking after the buying of wheat and the sales of flour. They are more particularly concerned with results than with details. With them it is more a matter of result than a series of questions in mechanics. As a rule, the winter wheat millers have entered their offices through the door opening off the grinding floor. They attend more closely to the daily run of the mill, and perhaps leave more to the discretion of their employes in the office than to those at work in the mill. At a general gathering, like a convention, this difference is plainly shown. The winter wheat millers are prone to discuss milling methods, while the spring wheat millers are apt to confine themselves to the discussion of business matters. The former show evidences of work in the mill. They wear pick marks and are proud of them. The latter show more familiarity with office work, and are perhaps fully as complacent over their attainments.

* * *

MILLERS from Indiana, Ohio, and southern Illinois, who are at the Chicago convention, say that the wheat crop has improved wonderfully during the last few weeks. Several gentlemen from southern Indiana say that there will be fully seventy-five per cent of a crop in their section, and that the quality was never better. The spirit of this report is echoed by those from other sections of the territory mentioned. Homer Baldwin, of Youngstown, Ohio, says that there will be more hard wheat of excellent quality in his vicinity than ever before. Altogether the outlook is more hopeful than it was a few days ago. Nevertheless the next ten or twelve days may put a different look on the crop prospects. Continued rains would do great damage. There have been many of the winter wheat crops destroyed during this time. We talked to a number of winter wheat men who said that they always made more money on a short crop than on a big one. They say that on a short crop there is less surplus to be worked off by the small mills who only make fifty to seventy-five barrels per day, and that they and a few others are the ones who dump flour on the market and break it down.

* * *

THE Case Mfg. Co., through their vice-president, present their view of the result of the suit recently decided in which they were victorious over the Consolidated Middlings Purifier Co., in an interesting letter published elsewhere. The facts recapitulated in this letter materially alter the appearance of the case as presented by us in our issue of June 15, just after the suit was decided, and give it prominence as a more decided victory over the Jackson monopoly. Though Mr. Case does not claim to be a writer for the press, his letter is a plain, logical statement, which does credit to one of the best mechanics who has ever given attention to the great work of improving milling machinery.

* * *

MILLERS and grain buyers who are figuring on future prices of wheat should not overlook the fact that the prospects of the wheat crop have much improved both in spring and winter sections, since the first of June. As usual the department of agriculture was too strong in its report of bad prospects issued June 1, on the strength of returns received up to the 20th of May. Since that time the improvement has been almost constant, and though in many sections the damage was too great to be entirely recovered from, the chances are all in favor of an average yield up to this date.

* * *

BRADSTREET'S of a recent date says:

"The most potent influences now in the general breadstuffs markets of the world are the prospective supplies from America. This includes not only the prospect for the next crop in this country but to a considerable extent the surplus yet remaining from the crop of 1882. If we accept the estimate of the department of agriculture at 502,000,000 bushels, which was probably somewhat below the actual crop, and deduct first, consumption for food for a year for 55,000,000 of population at four bushels per capita, and 15,000,000 bushels for manufacturing purposes, say 235,000,000 bushels; second, seed for 40,000,000 acres, say 60,000,000 bushels; third, total exports to April 1, 118,155,455 bushels—it makes an aggregate of 413,155,455 bushels which would leave 88,844,544 bushels yet available for export and consumption for three months before the new crop could be available. The exports in March were in wheat and flour equal to 6,158,652 bushels, against 6,292,243 bushels exported in March, 1882. Estimating the exports to continue for four months at the present rate it would take say 26,000,000 bushels, leaving 62,000,000 to 63,000,000 yet available for export and reserve."

The estimate of only four bushels per capita in the United States is far too low. It can be estimated at six bushels with safety. We consume more flour than the beef-loving Englishman or the wine-drinking Frenchman, and the average of those countries is put down at five bushels per capita. If the consumption be a barrel of flour per capita, or say four and a half bushels, it would reduce the estimated surplus of *Bradstreet's* calculation to 36,000,000.

* * *

CHICAGO has got another in on St. Louis. The *Tribune* in discussing the claims of St. Louis to a grain trade, scoffs at the idea. It says that the people settled on that part of the Missouri, overlook the fact that they are not purchasers of grain at all, nothing but mere middlemen receiving grain to sell to others on commission, while it claims that in Chicago, every ounce of grain is sold for cash, so that Chicago is a market, and not a commission house like St. Louis. It says that when St. Louis can take and hold twenty millions of bushels, purchasers will go there provided they can get the stuff to its destination cheaper than from Chicago. Until St. Louis buys all that is offered, and her rates of transportation are lower, she will remain what she is at present, nothing but a commission house. The same may be said of New York city, or rather that the grain reaches it in transit to some other place.

* * *

FORMERLY what a man discovered he concealed. This was mainly caused by the absence of patent laws. Even in large factories workmen were put under oath to keep the processes of their employers a secret. The doors of factories were kept closed, and workmen going out were searched, while no visitors were allowed in the *sanctum sanctorum* of the manufacturer under any circumstances. Even the workmen themselves were blinded by false operations. The mysteries of every craft were walled in by the great barrier of empirical pretension. The royal manufactures of porcelain were carried on in Europe for years with a spirit of jealous exclusiveness, and his majesty of Saxony was especially circumspect, and neither king, prince, potentate or common person, could enter the sacred walls of Meissen. The pottery known as Dresden porcelain was produced for over two hundred years by a process so secret that neither the bribery of princes nor the natural garrulity of the operatives revealed it. The manufacture of tinware in England originated in a stolen secret. It was discovered in Holland, and guarded with vigilance for nearly a century, until James Sherman, a Cornish miner, made himself master of the secret and carried it home with him. The secret of manufacturing cast steel was also stealthily obtained. One would naturally think that there would be very little secret in the manufacture of flour, a thing that enters into our daily bread, and is so much part of ourselves, that we pray for it. Yet, there are many millers in the country at the present time, who are quite chary of allowing people to visit their mills without first passing an examination at the office. It may be taken as a general rule that such millers have very little in their mills to be seen, and while it is not always proper for a man to have his mill on exhibition, yet he ought to allow millers to visit when they are passing his way, and not be afraid that they will carry off a smutter, a roll, or even an old millstone from the door. But there are those in the milling trade, as well as in other callings, who think they possess the philosopher's stone in milling, and hate to let less lucky ones gaze on it. Happily this is not practiced in the western states to any great extent as the majority of millers here show everything and thus invite a comparison, and so gain knowledge through their hospitality.

* * *

IF the information we glean from the English commercial papers be anyway near correct, we have placed the British farmer in a very sorry plight. It is claimed that he has been driven from grain into cattle growing by our extensive shipment of breadstuffs, and now we are again pressing sorely upon him by sending over our surplus beef and meats of all descriptions. This state of things leaves the British population more dependent than ever upon the grain and meats of foreign countries. The British people seem to be fully aware of this, and it is reasoned that the farmer and feeder will encounter very strong competition in the future from our abundant and cheaply grown animal and vegetable products. They argue very strongly that the real food value of the cereal is enormously greater with them than the best yield that can be obtained through stock raising, and besides, the production of cattle is strictly limited, while through a better system of farming applied to the production of grains and vegetables, these articles can be considerably added to. The humbler classes having had a taste of good American meats, and finding them toothsome and wholesome, despite strong efforts to place them in the background, will be like Oliver Twist, "asking for more," because they find it agreeable to the taste. We may conclude from this that no sophistry will change the taste of the British working classes after eating our well fatted meat and superior flour.

* * *

THE question of daily bread is one of interest to most of us. When it does not deal with the possibility of getting it, it is one of quality. With advancement in other things there has been improvement in the quality of the bread we eat, and as in other things this improvement has not been gradual or continuous. There have been periods of advancement, which would include only a few years, when the inventive faculties of the millers would be stimulated to the utmost. This would be followed by a long period of inactivity in this respect. The last ten years of the history of milling presents a busy unsettled record. During this time there has been a complete revolution in the manufacture of flour. It has required this time, the experiments, the large expenditure of money and energy to work out an idea which was clearly defined as to its purpose in the beginning. The methods which these years have developed were the unknown quantities. The present time appears to be the beginning of a period of quiet work, one which will profit by the revolution which has come about. The term daily bread has a widely varying significance in different minds. Circumstances change the definition. With the foreign peasant the understanding is quite literal. Bread means bread, generally of rather shady appearance and taste. With the American laborer it has a large meaning. It includes bread and much besides.

* * *

WHILE on the subject of bread we would like to ask how many millers take an active interest in the improvement of the quality of that made from their flour? Very few, we venture to answer, and yet it is more important to the reputation of the flour that it should be well handled by the baker or housewife, than that it should be well milled. A large firm of spring wheat millers, who follow their flour as nearly to the mouth of the consumer as possible, furnish us with the following directions, which they send out with every package:

"To one quart of milk or water add two-thirds of a teacupful of yeast; add flour to the thickness of batter, and let it rise over night; then add flour enough to knead softly twenty minutes, or until it will not cling to the board, as it requires much more kneading than winter wheat flour. Let it rise in the pan, then make into small loaves and let it rise again. Bake in a moderate oven. Be sure and not let it stand in the oven after it is done, and we will promise you a most beautiful, sweet, white bread. This flour will work very much better by thoroughly drying it out. Let it sit on the back of the stove, or some other warm place, twenty-four hours, and you will be surprised at the difference it will make in either bread or cake. Some good cooks keep a lot of dried-out flour on hand all the time, and regard it a great secret."

They also add the following directions for making the best yeast:

"Boil a handful of hops in two quarts of water ten minutes; then strain, and to the liquor add six good sized, grated potatoes, one cup of sugar, and one tablespoonful of salt. Let it simmer one-half hour; when lukewarm, add one cup of good yeast, and let it rise."

* * *

WE have recently seen the results of what a mill owner chooses to call an economical way of putting up machinery. There was a bad break, one man was hurt, and in the interval of time consumed in repairing the damage the mill was in a generally disorganized, chaotic and confused condition. An enforced association with this disturbance prompted some reflection on the word economy. It suggested that a diseased form of economy is parsimony. But economy is a virtue and parsimony a vice. These two extremes cannot in reality be confused. But the careless use of the word economy conveys the impression in a thoughtless way that there may be a mixture. Where one is the other cannot be. Parsimony and economy are entirely antagonistic. One of these words bears about the same relation to to the other that yes does to no, truth to a lie, or bravery to cowardice. Parsimony makes a man forget all his arithmetic, even that twice two is four. It engenders the logic which builds four times poorly, where economy would build once and build well. Parsimony will put a light pair of gears in a mill, and theoretically save three dollars, and practically lose five hundred in lost time.

* * *

OUR Winnipeg correspondent sends us a clipping from the *Times*, of that city, estimating the wheat crop of the province at 2,500,000 bushels. It is said that at Calgary wheat was twelve inches high on the third of June, and growing so rapidly that it could be seen to reach upward. This is a boom year for Manitoba crops of all kinds.

* * *

MR. JOSEPH FRIZELLE, of St. Paul, read a paper before the American society of civil

engineers at their session last Thursday which millers and citizens of Minneapolis take many exceptions to. His subject was the water power of this city, and his conclusions were, that it is not permanent; that the government has no call to attempt to make it so; that the wheels in use are improperly set by the advice of the water power companies in order to make them take more water than necessary, which is consequently wasted, etc., etc. From this very brief outline it will be seen that Mr. Frizelle is a trifle cranky in some respects. Despite the conventional St. Paul animosity to all things Minneapolitan which pervaded the paper, it contained some suggestions which may be worth publishing should we ever find ourselves short of copy.

## LOCAL & PERSONAL.

The feature of the week in the milling business has been a heavy decline in wheat, causing a drop in flour and the demoralization of the market for the latter. Wheat is 4 cents lower on the week, and this, coupled with the previous weak condition of the market, forced flour down 25 cents or more. However, our millers do not make large offerings at these prices, many holding to former quotations, and trade is rather at a standstill. One or two more mills are in operation this week than last, and the production is moved up a notch. On Wednesday there were seventeen mills running in the city, and the production will average close to 13,500 barrels per day, against 12,300 last week—a daily gain of 1,200 barrels. If the present state of affairs remains, the production next week will probably be curtailed, as the millers prefer to hold their wheat in expectation of better times in the future than to grind it under the existing circumstances.

Our receipts of wheat for the week ending Wednesday, were lighter by 33,000 bus. than they were during the previous week, and lacked about 33 per cent of being equal to the amount of wheat ground by the mills in the same time. The wheat stored in Minneapolis elevators, including the transfer elevator, on June 26, was 1,100,000 bus. There were about 360,000 bus. in the mills, making the total amount of wheat in store in the city, 1,460,000 bus., against 1,560,000 bus. last week. The wheat stored at St. Paul is about 218,000 bus. The wheat in store in Duluth elevators is 453,058.

The following were the receipts and shipments at and from this point for the week ending June 27, and corresponding time last year:

| | | Received. | Shipped. |
|---|---|---|---|
| Wheat, bus.— | 1883 | 273,500 | 16,500 |
| " " | 1882 | 185,000 | 35,500 |
| Flour, bbls.— | 1883 | 915 | 64,417 |
| " " | 1882 | 3,800 | 28,932 |
| | LAST WEEK. | | |
| Wheat, bus. | | 317,000 | 10,000 |
| Flour, bbls. | | 1,235 | 55,355 |

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The National mill is shut down.

The Humboldt started up Wednesday.

The Union mill is only running day time.

The Standard mill is shut down this week.

Jas. Pye has been out on the road four or five days.

Walt Miller has left the Standard mill to go nto the Pettit.

The Minneapolis and Zenith mills may shut down Saturday.

Ground has been broken in Topeka, Kas., for Daniel Crosby's new 300 barrel mill.

R. E. Kidder, of the Washburn A mill has gone to Dakota on prospecting business.

Our shipments of flour for the week ending Wednesday, averaged 10,736 barrels per day.

N. C. VanValkenburg got in last week from a trip through Wisconsin and this state.

The Holly mill will be shut down Saturday, when the funeral of Mr. Hinkle's father takes place at Cincinnati.

We were misinformed as to Matt Leahy taking charge of a mill at Fergus Falls. He takes second place.

Two purifiers, a centrifugal reel, etc., have been furhished Nelson Story, of Bozeman, Mon., for improvements in his mill.

Pressey, Pierce & Co. have opened a brokerage and commission office on the same floor with the chamber of commerce.

Jos. W. Peaslee, formerly in charge of the Croswell mill, recently entered the produce commission firm of N. I. Bacon & Co.

C. D. Harn left Tuesday for Denver, to take a hand in building the new mill being erected there. He goes for Chisholm Bros. & Gunn.

It is about settled that the Model mill will not be rebuilt as a flour mill, but a building may be erected at any early day for some other class of manufacture.

R. B. Van Brunt, representing Samuel Carey, the well known millstone and bolting cloth dealer of New York, wasin the city last week, and paid us a call.

Chisholm Bros. & Gunn sent J. H. Buchanan, S. V. Redford and M. Mason, to Crookston, Tuesday, to begin the millwright work on the new mill there. Mr. Buchanan will act as foreman.

The Palisade mill has been started up, but no grinding has yet been done. Head Miller Hill says the mill, so far as tried, has worked to perfection. It was receiving wheat the first part of the week.

By the close of the present week, the Pillsbury A will lack only about 8,000 barrels of having made 800,000 barrels of flour since Sept. 26th, last. Everything is now very favorable for the mill making 1,000,000 barrels or over on this crop.

Following were the wheat receipts by grade at this point for the week ending June 26.

| | Cars. | | Cars. |
|---|---|---|---|
| No. 1 hard | 63 | No. 3 regular | 186 |
| No. 2 hard | 42 | No. 4 regular | 9 |
| No. 1 regular | 143 | Rejected | 10 |
| No. 2 regular | 173 | Condemned | 91 |
| Total | | | 717 |

Willford & Northway have recently filled orders for centrifugal reels to Bernhard & Harrison, Morrisonville, Ill.; A. W. Dougherty & Bro., Ladoga, Ind. (second machine); A Egloff, Dall Station, Ind.; C. Volbrecht, Hanover, Minn. and A. E. Viault, Princeton, Minn.

The elevator of Pillsbury & Hulbert, at Barnesville, Minn., took fire under suspicious circumstances one day last week, but by the prompt efforts of the citizens, aided by a still day, it was put out before doing more than $100 damage. It is the belief that the fire was of incendiary origin.

E. B. Hill, formerly in the feed business on Washington Ave. south, and whose son, B. L. Hill, is employed in the Crown Roller mill, committed suicide in the Nicollet House, on the 22d, by shooting himself through the head. Domestic infelicity is given as one of the causes leading to the act.

A matter which promises to come up for consideration in the near future in Minneapolis, as between mill owners and employes, is that of wages. The different phases of this question have not escaped recent discussion by perhaps both sides, and the outcome will be watched with interest.

Wm. F. Gunn returned from Denver Monday, being accompanied by F. O. Ladd who was a millwright here in the days of John Webster's location in Minneapolis. Mr. Ladd is manager of the millwright firm of Ladd & Gehman of Witchita, Kas. He expected to return before the end of the week.

Mr. Gilbert, of the Warren Mill Co., at Warren, Minn., was in the city last week, and made arrangements for the resumption of work on the uncompleted mill of the above company. The services of millwright Edge, who commenced the mill, were secured by Mr. Gilbert and the work will be resumed by July 10, or earlier.

W. P. Northway and C. L. Rice were the appraisers in the case of the mill fire at Sauk Center. They say that the fire did its work most effectually, the engine being the only thing that escaped complete annihilation, and that will probably not be worth much. Mr. Northway is also appraiser in the Dayton mill fire.

The mills running Wednesday were the Pillsbury A, Phœnix, Columbia, Crown Roller, St. Anthony, Union, Holly, Cataract, Dakota, Anchor, Washburn A, B and C, Humboldt, Zenith, Minneapolis, Dakota and Northwestern. The Humboldt, Cataract and Holly have been shut down from one to two days.

Among recent changes that have occurred in the Standard mill has been the disposition by Mr. E. V. White of his interest in the firm of E. V. White & Co., to Mr. D. Morrison, his partner. Mr. White will, however, remain with the firm. Mr. Morrison has also acquired Mr. White's interest in one of his southern Minnesota mills.

Since Thos. H. Reeves took the agency in this city for the sale of the Lieb Lubricating Co.'s "Dux" lubricant, Messrs. Pillsbury & Co. have used it in their A mill on purifiers, bolting chests, and line shafting, and endorse it as the most economical lubricant that they ever used. This firm intend to give "Dux" a thorough trial in every department of their mills, feeling encouraged with their success so far.

The game of base ball between the boys of the Washburn and the Pillsbury mills has already been brought to a focus, a game having been arranged for Saturday afternoon. It will occur at 2:30 P. M., near the south Minneapolis station of the Milwaukee road. The club from the Washburn mills is as follows: Chas. Ganzel, catcher; Mike Rouse, pitcher; Chas. H. Overington, short stop; Ed. Moore, first base; Geo. Ganzel, second base; Ben Washburn, third base; Harry Matthews, left field; Matt Rouse, center field; Wm. Rothaker, right field. Ben Washburn will act as captain.

One day this week we dropped into the conveyor flight manufactory of S. C. Buck, in the basement of the shop formerly occupied by A. H. Kirk on Sixth Ave. and there saw machinery doing its work which for completeness in the manufacture of flights we believe has no equal. Taking the timber in the log Mr. Buck finishes his flights in six operations, by machinery of his own invention. With two minor exceptions, the work is all done by saws arranged at different angles by ingenious means. The completeness of Mr. Buck's shop can be best appreciated after being seen.

The death of A. H. Hinkle, father of W. H. and F. S. Hinkle, owners of the Humboldt and Holly mills in this city, occurred at Andover, Mass., Monday morning, whither Mr. Hinkle had gone from Cincinnati to attend the graduation of his youngest son. The residence of the deceased was at Cincinnati, where he was a prominent citizen, having acquired a large fortune in the school-book publishing business. He was sixty-nine years of age and had retired from active business, devoting much of his time to charitable work. He was a frequent visitor at Minneapolis, and had large investments here. Messrs. W. H. and F. S. Hinkle, with a brother-in-law, left for Cincinnati Tuesday evening.

Crop reports received the past few days, says the *Pioneer Press* of Wednesday, from all parts of the state, are much more satisfactory than they have been for some time past. The weather has settled pretty much everywhere, and all vegetation has been given a fresh impetus. From the northern and northwestern sections of the state, and some portions of Dakota, a little more rain is needed, while in the southern and southwestern the weather has cleared, and the growing crops have been helped much by the recent warmer weather. The cold wave which reached this section of the country Sunday, and tarried until Monday night, while general, yet was not of sufficient greatness to cause any damage whatever. The effect, if any, has been beneficial. Reports from the corn-growing districts are decidedly more encouraging, and a much larger crop is expected now than was hoped for this time last week. From the wheat-growing districts everything is progressing as finely as could be wished. In some sections of the country, particularly in the Red River valley, a little more rain is needed, but the want of it has not as yet been sufficiently urgent to cause any damage. The weather in the valley has been clouding up for the past few days, and the desired rain is now expected daily.

As the head millers have some money left over from their excursion, different ways are being discussed as to what purpose it shall be put. The one seeming to meet with most approval is to make what they now have on hand the nucleus of a fund to be created for the erection of a monument on the lot in which the victims of the great mill explosion are buried. This lot is now in the hands of the city, and a committee was appointed at the last millers' meeting to see what could be done about getting it turned over to them for the purpose of erecting a monument thereon. A meeting of the head millers was to be held at this office Thursday evening, when what disposition was to be made of the surplus excursion money was to be decided. Besides the monument proposition, that of creating a fund from which donations can be drawn for the benefit of deserving mill employes who are unfortunate enough to need them, or that the money be used in fitting up a millers' reading room or library, have also been suggested. Something of the nature of the latter we should prefer to see done. It might be well for the millers to embellish the lot spoken of, if it needs it, in a comparatively inexpensive way, but as for putting up a monument, it seems a pretty large undertaking, and it should be well considered before being attempted. However, we think that any object of this kind which the millers may set about to attain, would be beneficial to them, as it would have a tendency to draw them together and promote the general welfare of the fraternity in this city.

### The Convention.

The ninth annual convention of the Millers' National Association was held in Chicago, at the Grand Pacific hotel, on Tuesday the 26th instant. Ther was a large attendance of prominent millers from all parts of the country. The convention was called to order by J. A. Christian of Minneapolis, who nominated Ed. Sanderson, of Milwaukee, for chairman, and that gentleman was unanimously elected. Upon taking the chair, he spoke on the great importance of the milling business, and the reasons and necessity for organization, the principal one of which was for protection against patentees, who, in many cases, assume to own their mills and machinery. They had been successful in their legal fights, and had saved their property from the patent claim thieves. They had shown that in union there was strength. After the appointment of the committee on permanent organization, the convention adjourned until two o'clock. Upon reassembling, the report of the executive committee, which met in Chicago Nov. 20, 1882, was re-read for the benefit of those not present at that time. The secretary reported as follows: recent decisions of court have cleared the docket, and for the first time in seven years this organization is free from law suits. At the Cleveland meeting last January the sum of $1,000 was offered for the invention of a practical machine which would economically pack or compress bran into a cheap and suitable form for export, whereby at least five cents per 100 pounds could be saved in the packing on freight. Mr. Seybt, in his address, stated that he found in Chicago what was wanted, and he hoped the association would push the matter. The treasurer reported the following:

| | |
|---|---|
| Amount brought forward | $22,175.04 |
| Expenses | 17,813.70 |
| Balance on hand | 44,361.34 |

A committee, consisting of one from each state, to elect officers for the ensuing year, was appointed. Resolutions were adopted thanking the officers for their untiring efforts in securing the dismissal of the suits against this organization, and which has put the association in excellent standing. Adjourned to attend the base ball match between the flour men of Chicago and St. Louis in Base Ball park. The latter proved victorious in the game, 35 to 5. This is a great victory for St. Louis, and achieved, too, in the camp of the enemy, makes it all the more glorious.

SECOND DAY.

The convention met, and several questions were discussed, after which the annual election of officers occurred, resulting as follows:

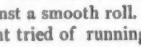
President, J. A. Christian, Minneapolis; first vice president, C. H. Seybt, Highland, Ill.; second vice president, Homer Baldwin, Youngstown, O.; secretary and treasurer, S. H. Seamans, Milwaukee.

The subject of transportation rates was referred to a committee. A member who lately returned from Europe reported large quantities of flour in store in foreign countries and crops prospering unusually well. He predicted that fancy prices for flour would not rule the current year. This concluded the deliberations of the association and it adjourned. In the afternoon the representatives of the milling journals of the United States met in the same room in a social and fraternal manner. Short and witty speeches were made and a general good time was indulged in. A full report will appear in next issue.

## ROUGH NOTES.—XXXI.

FROM A WORKING MILLER'S POCKET BOOK.

In expressing opinions, in using the pronoun I as sparingly as possible, it is difficult to keep this matter from having a dictatorial or an egotistical spirit, but I work very hard against such a thing, and recognize that my experience does not justify such a position, and if it did, I do not think that it would be wise to do work of this kind in such a spirit. There is no one who recognizes more fully the weakness of this work than myself, and if those who take occasion to read it would make the proper corrections and suggestions, there could be general good accomplished. The purpose of these notes is to bring together the milling ideas which come to one person either through his own experience or from the expressed experience of others. The last notes spoke in a general way about the intimate relation existing between the reduction and separating machinery, and the writer suggested that it was difficult to treat the two separately, one apart from the other. So, suggested by the above, it is my purpose to take a look through the mill, taking each reduction and the separating machinery which immediately follows it, making such observations and notations as such a course would naturally bring out. Starting with the first reduction it is natural to consider its requirements. The express purpose is to split the wheat in order to release the crease impurities. I will say right here that I have never seen a reduction machine which did that thing with any considerable degree of completeness. I think it is fair to say that a good proportion of the grains are split, but not all by any means.

There are many grains with the backs and ends knocked off, and then there are those which are cut lengthwise, but there is not that large proportion of wheat which is split through the crease that is desirable. However, I have not seen all the reduction machines, by any means. I have expressed my ideas about the first reduction to many of my acquaintances, and have often been met by the remark: "You should see so-and-so's first reduction." Maybe I would see it in time, and whereas it might be better than what I have been used to, it would not meet the express purpose of this reduction. With roller machines there are various means and arrangements with the express purpose of doing this thing. Lately I have heard of rolls with very coarse corrugations, say four to the inch. And then there is a roll with coarse corrugations running against a smooth roll. I have seen the experiment tried of running sharp cut rolls of the ordinary corrugation, eight to the inch, at integral motion; that is, both the same speed. The more common way, I believe, is to run such rolls two to one, the sharp part of the corrugations together. A very fair break with sharp cut rolls can be made by running the dull backs together. This can be done by running what is ordinarily intended for the slow roll, fastest. I saw a very ingenious machine described in the NORTHWESTERN MILLER a few months ago, but the writer did not state whether the machine had ever been actually built or not. As a matter of curiosity, I, for one, would like to know more about it through these columns. I have been told that the Jonathan Mills machine makes the best first break, but as I have never seen this machine in operation I cannot speak from my own knowledge. A gentleman described to me a machine which was tried. It was a form of disc machine similar to the Jonathan Mills but different in dress; it had furrows, in form thus  . There was no draft except a very little at the skirt. He said that it worked very well, split the wheat, but made entirely too much flour.

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But to take the break as it is ordinarily with the roll eight corrugations to the inch, it is a mere repetition to say that the wheat ought to be graded.

After the stock leaves the roll it goes to the reel clothed with eighteen and twenty wire. Sometimes a sieve is used. But whatever preference I might have for a sieve elsewhere, I do not think it has a place as a first break scalper. The motion of the reel is inclined to assist in the work of the rolls in that it will separate the pieces of wheat that remain together after leaving the roll, and which have not been entirely broken thereby. This is one place where the work of a disintegrator is useful, and a reel answers this purpose very well. It completes the unfinished work of the roll. It jars the pieces of wheat apart and liberates the crease impurities, as well as the middlings. I see where some one advises the use of a centrifugal reel for this purpose, and I see mention made of where such reels have been used as smutters, covering them with steel wire cloth. The "Trade Talk" mentions their use after the ending stones in one of the Washburn mills. All of this suggests that a reel slightly longer than is absolutely necessary to make the separations might do good work as a scalper for this break. It would knock loose a good deal of dirt and continue the work of the wheat cleaning machinery in a mild way. This idea is used in the dismembrators and in various other special machines in connection with the reduction. A good first reduction by any machine can never be made unless the wheat is graded, and whereas eight corrugations to the inch are proper for the largest grains of wheat, or for the wheat as it goes on the rolls in an ungraded condition, I think it is fair to say that smaller corrugations—say ten to the inch—should be used for smaller wheat. Some time since mention was made in these notes of the relation which the corrugations bear to the clothing of the scalping reels. The size of the middlings is determined in a large measure by the size of the corrugations, and as it is desirable to take out the middlings as fast as they are made the reels should be so clothed that they will not carry over middlings from one reduction to another. I think that it is fully developed that No. 20 wire cloth will not carry over middlings to the next reduction, when rolls with eight corrugations to the inch are used on whole wheat. This, of course, covers its use on the first reduction. At the same time that No. 20 wire will not carry over middlings as mentioned, I think any finer number would. No. 18 wire is used a great deal on the first break, but the middlings which go through such a number are equal to those of No. 0000 silk, and there are very few mills which have facilities for taking care of so large a grade of middlings. It is embarassing and unsatisfactory to try to do anything with them mixed with smaller middlings. In truth they are very lumpy, being ends of wheat or small bits of middlings with large adhering portions of bran, which bran determines their grade rather than the middlings themselves. If one were to examine middlings which pass through a 0000 cloth he would see a very small proportion of pieces which did not have adhering portions of bran. In fact, such bran gives color and character to the whole product. Adhering bran is the rule and not the exception. They are nubs rather than middlings.

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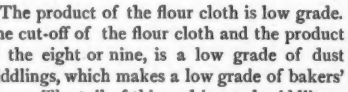
The product of the scalping reel, which is flour and middlings, is usually and preferably cared for by itself. By that is meant that the flour is bolted and sent to the packer and the middlings sent to their proper place in the mill for the purpose of grading and purification. The work of taking care of this product is often done on two reels, but still more frequently on one. The reel is clothed, when only one is used, in many instances thus:




The product of the flour cloth is low grade. The cut-off of the flour cloth and the product of the eight or nine, is a low grade of dust middlings, which makes a low grade of bakers' flour. The tail of this reel is good middlings, which may well be sent to the grader. When two reels are used the middlings should first be scalped over an eight or nine cloth, and the flour cloth on the next reel below. Oftentimes the product of the scalping reel as mentioned, i. e., that clothed with eight or nine cloth, is sent with the sixth break stock to be bolted. It is my belief that this is objectionable because, as a general thing, on winter wheat the flour is poorer from the first than the sixth break, and further, because the middlings which will go through an eight or nine cloth are of a better grade in case of the first break than is the case with the corresponding or larger middlings of the sixth. The flour from the first break varies in quality with the same grinding and the same general grade of wheat. Winter wheat immediately after harvest makes better first break flour than later in the season. This is the case even though the wheat be quite dry and hard at the beginning of the crop year. Soft wheat makes better first break flour than hard wheat.

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It was said once before in these notes, and it is undoubtedly the experience of many millers, that there is really a very small proportion of flour made on this break. When gradual reduction methods were first introduced, I was led to believe that three, four, and even five per cent of the break flour was ordinarily made at the first reduction. By grinding ordinarily close, I think that two per cent of flour is more than is usually made in this part of the mill. The proportion of flour made by rolls with corrugations as coarse as those here used is not in the ratio of their close setting when grinding. It is not possible to make a very large proportion of flour with such coarse corrugations.

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The produce and grain exchanges of New York, Chicago and Milwaukee alone could in a very few months, if their members were so disposed, reduce all dealings in those lines within safe and strictly legitimate limits. As the country grows, and the amount of capital and energy engaged in actual trade, as opposed to mere gambling increases, it is probable that such limitations will gradually become stronger. At first the tendency is the other way, but it ultimately changes, and sober-minded men, who hope to see the vast commerce of the country rid of the disturbing influence of such adventurers as McGeoch, will have to trust to this reaction, and, in the meantime, aid it as much as possible by their example and influence.—*N. Y. Herald.*

# BUSINESS NOTICES.


## STEVENS ROLLS RE-CORRUGATED.

Millers in the west and northwest, who may have Stevens rolls that require re-dressing or re-corrugating, can have such work promptly and expeditiously performed by MR. ROBT. JAMISON, NEENAH, WIS., to whom we have furnished an outfit of specially constructed machinery for this purpose.

THE JNO. T. NOYE MFG. CO.,
BUFFALO, N. Y.

## CLUB LIST.

NORTHWESTERN MILLER with

| | | |
|---|---|---|
| American Miller | 1 year | $2.50 |
| London Miller | " | 3.00 |
| Scientific American | " | 4.50 |
| American Agriculturist | " | 3.00 |
| Harper's Magazine | " | 5.00 |
| Century (Scribner's) Magazine | " | 5.30 |
| Boston Journal of Commerce | " | 4.25 |
| Abernathy's Hints on Millbuilding | " | 4.00 |
| Emerson's Book | " | 2.50 |

Other publications, not on above list, can be furnished in connection with the NORTHWESTERN MILLER, at a corresponding reduction on the price charged for them separately.


## MILLERS' NATIONAL ASSOCIATION.

SECRETARY'S OFFICE,
MILWAUKEE, Wis., May 5, 1883.

*Mr. Julius Schlesinger, Secretary Milwaukee Dust Collector Mfg. Co., Milwaukee, Wis.*

Dear Sir:—Your favor of yesterday at hand, giving official notice that arrangements are concluded whereby purchasers of your machines are fully protected under all the patents of Messrs. Kirk & Fender, the Geo. T. Smith Co., and S. L. Bean, which, with the Prinz patents, cover fully all known devices of importance necessary to a successful dust collector—and I see no reason why this arrangement will not be perfectly satisfactory and acceptable to our members, as well as millers at large. I congratulate you upon this "master stroke" which enables you to furnish a successful machine that carries with it a perfect title to the purchaser. My own experience with your machine warrants a favorable expression as to its merits, and your policy to protect purchasers is worthy the consideration of other manufacturers. Yours truly,

S. H. SEAMANS, Sec'y.


## A LONG FELT WANT SUPPLIED.

The La Crosse Smooth Chilled Iron Roller Mill—price $125.00. These mills will crush tailings or size middlings for a 100 barrel mill. For particulars apply to JOHN JAMES & CO., La Crosse, Wis.

## BOLTING CLOTH.

Don't order your cloth until you have conferred with us. It will pay you both in point of quality and price. We are prepared with specia facilities for this work. Write us before you order. Address

CASE MFG. CO., Columbus, Ohio.
Office and factory 5th St., North of Naughten.

## ALWAYS AHEAD.

The Atlas engine works have brought out a new automatic cut-off engine of remarkable simplicity and at a very low price. There is nothing equal to it in the market for any money. The sizes run from 20 to 100 horse power, and all who intend putting in new engines for mills this season should be sure to see this before buying. We hope to have a sample soon and are ready to receive orders now.

SHATTO & DENNIS,
207 Washington Ave. North,
Minneapolis.

## IMPORTANT NOTICE.

*To whom it may concern:*—For the more complete protection of our patrons, and to secure them beyond question against loss or annoyance from suits for infringement with which they have been threatened, we have, at a great cost to ourselves, secured a LICENSE from the GEO. T. SMITH MIDDLINGS PURIFIER CO., of Jackson, Mich., KIRK & FENDER, of Minneapolis, Minn., and SAM'L. BEAN, of Washington, D. C., licensing the "PRINZ" dust collector under all dust collector patents owned by the parties above named. The patents now controlled by our company on this class of machines cover broadly the whole process of collecting dust in flour mills, and all the most modern devices by which the process is carried out.

The license, which we shall furnish to all parties having dust collectors made by us, carries with it *absolute* security and *protection* in the use of our machines. Yours very truly,

MILWAUKEE DUST COLLECTOR MFG. CO.,
JULIUS SCHLESINGER, Sec'y.


## NOTICE.

### NINTH ANNUAL CONVENTION.

SECRETARY'S OFFICE,
MILWAUKEE, Wis., May 16, 1883.

The next annual meeting of the Millers' National Association will be held in the Grand Pacific hotel, Chicago, commencing Tuesday, June 26, 1883. Every member should *make it his business* to be at this meeting. Make it manifest by your presence that you appreciate an association that has saved its members more money, in *dollars and cents*, than any other organization ever formed in this country, and the "grist isn't half ground out." While there may not be as much *desperate* business on hand as usual, there are still important matters to claim your attention. Let it be a grand re-union to celebrate victories won, renew old acquaintances and make new ones. Outsiders may join by making application to the secretary and accepting the terms offered at the Cleveland convention, viz., $5 per unit capacity—membership fee, and the assessment ($10 per unit) for 1883.

ORDER OF BUSINESS.

1. Opening of the convention, 11 o'clock A. M.
2. Report of committee on credentials.
3. Proceedings of last convention.
4. Enrollment of members.
5. Official report.
6. Call of standing committees and filling vacancies.
7. Appointment of committee on nomination of officers.
8. Reports of standing committees.
9. Reports from special committees.
10. General business.
11. Reports of committee on nominations, and election of officers for the ensuing year.

S. H. SEAMANS, Secy. and Treas.

# MILLING PATENTS.

BRAN DUSTER.—To L. S. Hogeboom and F. B. Smith, Three Rivers, Mich; No. 279,387; dated June 12, 1882. Fig. 1 is a plan view of the machine; Fig. 2 a side view; Fig. 3 a vertical sectional view; Fig. 4 a plan view, top removed; Fig. 5 is a cross section; Fig. 6 is another cross section; Figs. 7, 8, 9, and 10 are detail views. Claims: 1. The combination of the annular interior shelves P′, and the wire cloth case, said shelves having their upper surfaces formed with the rectangular studs *t*, arranged to leave intervening channels *v*, and beveled or sloping margins *z* of the discharging openings *w*. 2. The combination, with the studded annular shelves P′, of the revolving radial whippers *b*′, arranged above and out of contact with said studded shelves. 3. The combination, with the series of studded shelves P′, and the intermediate whippers *b*′, out of contact therewith, of the sloping distributing plate *a*′, above the series of shelves, and the plane running plate W, having the peripheral feeding notches or openings *d*′ below said series of shelves. 4. The combination, with the inner wire cloth case and its annular studded shelves of the series of radial whippers, the running plate W, the brushes Y, and the obliquely turned fan blades Z. 5. The combination, with the inner removable bran case, of the lower supporting spider plate H, the adjustable centering plate K, the removable top plate L, and the adjustable centering ring N, and connecting bolts and washers. 6. The combination, with the inner case, of the jarring devices, consisting of band *p*′, around the same, the spring knocker G′, and the lateral shaft provided with the projections *z*′. 7. The combination of the revolving tube D′, a vertical supporting shaft *n*′, and the receiving hopper, said tube being arranged under the spout of the hopper.

Fig. 1

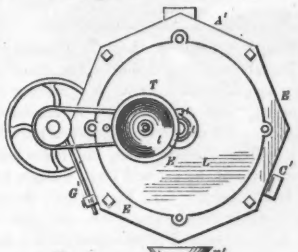


Fig. 2

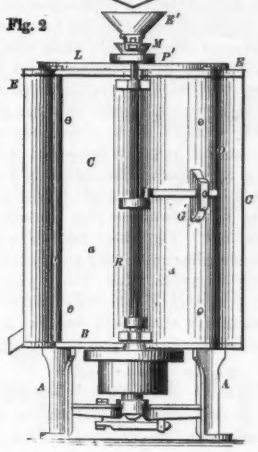


Fig. 3

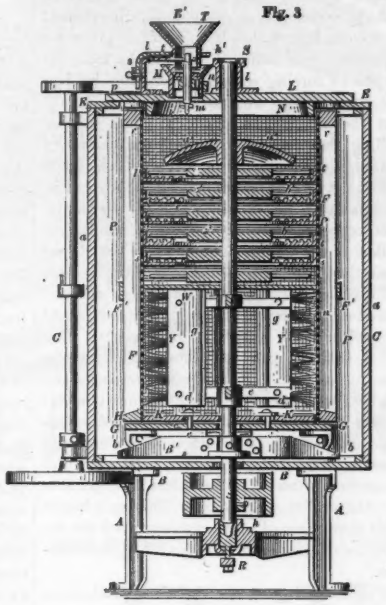


Fig. 4

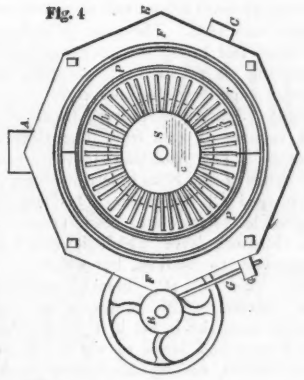


Fig. 5

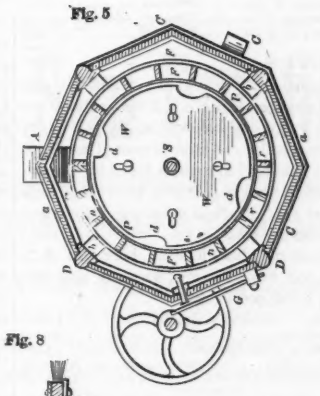


Fig. 6

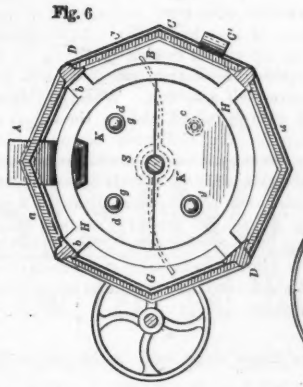


Fig. 8

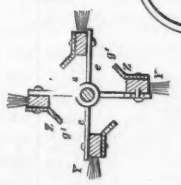


Fig. 9

Fig. 10

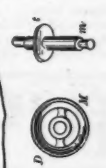
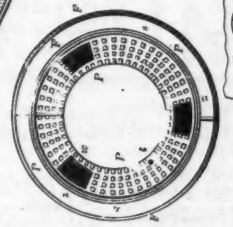


Fig. 7



PATENT NO. 279,387; BRAN DUSTER.

# TRADE TALK.

*This column is open to all regular subscribers to the Northwestern Miller, and all questions will be answered by competent practical millers at the publisher's expense. Unless signed by the editor, all matter published is given as the expression of individual opinion, for which the Northwestern Miller assumes no responsibility. Subscribers asking questions or criticising matter appearing here or elsewhere in the Northwestern Miller, may use initials or such signatures as they may select, but every letter must be accompanied by the full name of the writer, as only bona fide communications will be printed. The fullest criticism of anything and everything appearing in the paper, in this department or elsewhere, is invited.*

Oscar W. Tresselt, Fort Wayne, Ind. Answer to "Henry G.," Mo., in NORTHWESTERN MILLER of June 15. "As all millers, who have had any experience with high grinding, know, coarse middlings can never be pure, but will contain portions of bran adhering to them. Sizing down on rolls and purifying make them clearer, and continuing the operations of sizing and purifying they become clearer and purer, yet contain, even if reduced down very fine, some bran and fuzz. The same is the case with flour; purity increases with fineness. Too coarse flour, if made of the best of purified stock, will still have some fuzz intermingled with it; it may not be visible in the flour by the naked eye, but is there, and may show in the loaf. My opinion is, that a baker wants *granulated flour*, but *no coarse flour*, as baking qualities are not bettered by coarseness, but just the reverse. A coarse flour is never well dressed; the granules will differ in size in such flour to a much greater extent than in fine flour. Fine flour can and ought to be very sharp, and if milled correctly, or with other words, if *granulated*, can not be excelled in baking qualities, even if bolted on a No. 15 cloth. With our low grinding system, flour was frequently very soft, soapy and partly killed, puzzling the baker, so that with the utmost exertions, he could not realize a good loaf. With the gradual reduction system, flour became sharp, and the baker noticed, that with flour running through the sieve or his fingers like dry sand, and being sharper and coarser, it was an easy matter to bake good bread; he consequently attributed baking qualities to the coarseness of flour and demanded coarse flour. The miller then often went to extremes, made and sold a product which might more properly be called fine middlings than flour. I believe the baker wants only unkilled flour, which may be very fine, and yet have life and all baking qualities. The Hungarians are using finer cloths than most American millers. No. 12 cloth was the coarsest which I found in use in Hungary on flour reels, but finer ones predominate. I worked in a mill where most flour was made on No. 16 cloth, on centrifugal reels; the coarsest number on their old style reels at the head was No. 14. The flour was very sharp and brought the highest market price. Hungarians in general use a little coarser cloth, and I think the most of their flour bolts out through No. 13 cloth at the head and Nos. 14 to 15 at the tail end of the reel, but No. 12 is also used at the head in some mills. Last summer I met a gentleman in St. Louis who said that Hungarians run a small portion of fine middlings in with their flour to make it sharper, which he detected by sifting Hungarian flour through a small hand sieve clothed with silk. As the action of a hand sieve is much less severe than the action of beaters in a centrifugal, or even than the falling and thumping of material in a common reel, there must necessarily be a remnant in the sieve of the coarser granules of flour. Besides, carrying out gradual reduction on fine middlings to such an extent as they do abroad, material admitted to to the flour reel will be very sharp and bolt very free, so that with No. 14 cloth, particles of such sharpness will pass through that they may be called fine middlings. I know that they never purposely run fine middlings into their flour. By looking over my diagrams of bolting arrangements, which they used over ten years ago, and comparing them with their diagrams of the present, I noticed that now they are using finer cloths than they did then, and I judge if comes cloths were preferable they would not have replaced them with their finer ones. A disadvantage in using fine cloths is the slowness of bolting. With fine cloths it will be found necessary to increase bolting capacity and also sometimes additional buhrs or rolls will be needed to make a fine and yet sharp flour. The milling system becomes more complicated, demands more machinery, attention, and a trifle more power."

"A Millers' Son," Kansas. "Who was really the first practical inventor of the steam engine? Some say Watt, and I'm in a plight to know all about it." Papin, of France, was the first, (in 1690) to operate a piston by steam, which acted only on one side of the piston. He also invented the safety valve. Savery, 1697, first employed steam-power in doing useful work. James Watt was the first to make the complete steam-engine, or the existing forms in which steam acts on both sides of the piston. He also made the steam-condenser, the governor, the walking-beam, applied the fly-wheel, and nearly all the parts of the modern engine. He was born in 1736, died 1819. He made a rotary steam-engine in 1782, and patented a locomotive-engine in 1784. In 1804, Trevithick and Vivian operated a locomotive which traveled five miles an hour, with a load of ten tons. Cook, in 1808, used fixed engines and ropes to draw railway cars. Blachett and Hedley, in 1813, discovered that smooth locomotive wheels might be used on railways, instead of toothed wheels and toothed rails before required. George Stevenson, 1825 made railway locomotion successful by adapting the locomotive to variable speeds and loads, by means of his blast-pipe, and by introducing the tubular boiler, which latter was suggested to him and invented by Booth, 1829. October 6, 1829, the famous competitive trial of locomotives on the Liverpool & Manchester railway took place, which established the superiority of Stevenson's locomotives, and inaugurated the era of railway communication.

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"Shipper," N. Y. "There is some discussion going on at present among shippers, as to the safest way to carry grain, whether it is to be stowed in bulk, or carried in ordinary bags. Grain is often carried in bulk and bags on the same vessel. The custom is to load the vessel two-thirds with bulk grain and then put a layer or two of bags on top. It is claimed that the layer of bags prevents the grain from shifting. It is also claimed that if more care was taken that there would not be so much damage on the lakes. It is customary when grain is loaded in bulk to have an elevator at each hatch, where it is shot into the vessel like a stream of water, without giving time for the air to escape, and in this way the cargo is prevented from being trimmed properly. The vessel should not be filled up at once; the loading should be checked when the hold is about half full to allow the air to escape and the grain to settle. Many grain carrying vessels are now being fitted with boxes or compartments, with a capacity of from eight to fifteen or sixteen thousand bushels, and where vessels are built in this way, grain is as safe as other cargoes, but the safest of all methods to carry grain is to put it into air tight compartments, from which all the atmosphere has been forced out by an air pump, and not only would the vessel be more buoyant, but the grain would be free from the ravages of insects, and no germination could take place."

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"A Mild Crank," New York: "The battle of the buhrs and rolls is being fought over in Europe in as lively a manner as ever, and the war is likely to continue until some third dog takes the bone in the shape of an invention for the granulation of grain that will at once, and without discussion, take the place of both the roller and buhr. It is not at all beyond the domain of science and inventive skill to do this, and several systems, among them the Carr-Toufflin system of comminution, was at one time a very close and persistent competitor for the honor, but many condemned the machine because it was contrary to the understood methods of granulation, in consequence of the danger of deterioration which the wheat would be likely to suffer from being too vigorously treated, by reason of its delicate and intricate structure. Various other methods have been tried and each in its turn discarded. The attrition machine, it was claimed, was a complete success, but nothing can be a complete success that requires auxiliary machinery to complete the reduction, and the attrition system required buhrs for this purpose. There are many who lay great stress on the fact that if the grain was properly cleaned the systems now in use are as complete as may be desired. The cleaning of grain is lost sight of in a very

great measure since the introduction of the purifier, and there are millers who assert that cleaning is not of such consequence, as all light and flocculent dirt which adheres to the bran can be taken out and sent to the dust room by the purifier. It seems to us that one important fact is overlooked in this; namely, that starch attracts just such dirt, and the best system of purification will fail to make a white flour when the grain is not thoroughly cleaned. But, on the other hand, if the grain is well cleaned, the purifier will have less work to do, and will, therefore, make a more superior flour. The question is often asked: are we moving fast enough and sufficiently ahead of foreign rivalry so as to send them flour instead of wheat? All the systems we have in use here are also in use in Europe. Labor and coal is cheaper in Europe, particularly in Great Britain, the rate of interest is lower, and the mode of handling by bags is another item to be taken into consideration. So that the question is pertinent at present: have we settled down to a system, or will we go on improving and perfecting the systems we have in use until some other cheaper, quicker and more perfect system is invented and put in operation? The age of improvement has not passed, and it is not unreasonable to say that the end of the present century will see as radical a change in the modes and systems now in use as the present system is from that of fifteen years ago.

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"J. A. C.," Manitoba. "I would like to know the difference between bursting and exploding." Bursting and exploding are two different operations, explosion being an effect of the bursting. A boiler may burst but not explode, but a boiler must first burst before an explosion can take place. As long as a boiler remains sound there is no possibility of an explosion, but the instant the boiler gives way—bursts—then the posibilities of an explosion are in proportion to the suddenness and extent of the giving way or bursting.

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Mr. I. I. Andrews, a miller of Gap Creek, Wayne county, Ky., has invented a grain cleaning machine which he is anxious to have generally introduced in the trade. He has faith in it and thinks at the reasonable prices at which it can be sold it will become a favorite with millers.

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D. A. P., New York: "There is a point about flour that has bothered me a great deal, and that is, why sharp flour is considered better than that which is of a softer nature? Why do bakers invariably prefer flour of this character? There is, of course, some good reason why, but I am forced to confess that I never could make it plain to my mind. I of course can readily understand that if flour has been ground so close as to injure it, that it would be better if it had not been reduced so fine. Will some of your 'experts' and 'professors' come to the front on this subject."

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A. Shuman. "I have heard of hard stee being cut with soft iron, and some time ago I heard of a grindstone being made true by a small bar of soft iron. Please give particulars." The discovery is as old as Tubal Cain, the first known cunning worker in brass and metal. It is on the same principle that the barber cuts the superfluous steel from the edge of his razor, by the same principle of abrasion, without ascribing any magnetical attraction to his strap. A small sharp stream of water never fails to cut the hardest rock it meets with; in short, all rivers form their beds by the same power of abrasion, or friction. Suppose a plate was six, eight, or ten inches in diameter, and only one-twentieth of an inch thick, it would occupy a very small line on the material to be cut; every particle of that line would be subjected to many yards of particles by the rotatory motion of the cutting-wheel, and no two particles of the line could be touched at the same time by any round wheel; if the wheel were hard it would not cut so well, but glide over; but the file, or saw, being hard, makes no difference here, because each particle, on being subjected to the current of friction, soon becomes softened, and serves to compose the flash of sparks seen on such occasions.

## MILLING AT MILWAUKEE.

[SPECIAL CORRESPONDENCE.]

The weak and sluggish feeling apparent at our last weekly review is still without change. More mills are running, as wheat is some lower, but any actual demand is out of the question. Wheat and flour are both low enough now for buyers to lay in stocks, but the price seems to have no influence whatever. Our markets are overstocked, and no brisk demand will spring up until stocks of all kinds are reduced. This being the fact, what benefit can the miller derive from forcing flour on buyers, when in doing so no profit is realized and the present large stock is not diminished? Every one knows that if a buyer inquires for an article and wants it, he will pay more for it than by forcing something on him he does not want. Then why not combine and protect the article you produce. The suicidal milling that has been carried on by some of our large milling firms in forcing their flours before buyers at less money than they can be manufactured for, has shown itself by the recent reported failures of some of the largest millers in the United States. This I predicted some time ago, and unless something is done soon we need not be surprised to hear of many more before a new year. A cable just received in answer to a very low offer, reads: "No c. i. f. business can be accomplished; advise you to consign." Consigning restocks the markets and prevents c. i. f. business; nevertheless it is done and is increasing, and unless done away with to a considerable extent, will show a continual depression, such as I have heretofore shown. I am pleased to say that our Milwaukee millers are milling on a better basis than some of our neighbors, and the expression of their countenances fully guarantees this.

The following shows the daily production for the week:

| Operated by | Mill. | Bbls. |
|---|---|---|
| J. B. A. Kern & Son | Eagle | 850 |
| L. R. Hurd, (Manager) | Daisy | 300 |
| F. H. Magdeburg & Co. | Gem | 200 |
| Schlessinger & Daggett | Northwestern | 400 |
| E. Sanderson & Co. | Phœnix | 1,000 |
| S. H. Seamans & Co. | Empire | 180 |
| C. A. Manegold & Co. | Reliance | 400 |
| Total daily production | | 3,330 |

The demand for city trade flour remains without change of note. A few patents are selling at $7.25 and bakers' at $5.75. City mills patent roller rye flour is quoted at $3.50 per bbl. The feed market is dull and drooping. Sacked bran is quoted at $12.00 and bulk $10.00 per ton. Sacked middlings $14.00 and bulk $12.00 per ton.

The stock of wheat in store here this date is 2,010,000 bus., against 816,000 bus. last year and 1,886,000 in 1881.

| FLOUR—RECEIPTS. | Bbls. |
|---|---|
| For the past week | 60,506 |
| Corresponding week last year | 53,423 |
| Since Jan. 1, 1883 | 1,489,187 |
| Corresponding time in 1882 | 1,476,148 |
| SHIPMENTS. | |
| For the past week | 73,468 |
| Corresponding week last year | 67,530 |
| Since Jan. 1, 1883 | 1,758,143 |
| Corresponding time in 1882 | 1,891,884 |
| WHEAT—RECEIPTS. | Bus. |
| For past week | 187,179 |
| Corresponding week last year | 133,820 |
| Since Jan. 1, 1883 | 3,709,566 |
| Corresponding time last year | 3,333,706 |
| SHIPMENTS. | |
| For past week | 28,025 |
| Corresponding week last year | 19,216 |
| Since Jan. 1, 1883 | 523,511 |
| Corresponding time last year | 611,067 |

***

E. Sanderson & Co. have added the Prinz dust collectors to their cleaning machinery.

Most of our millers intend going to Chicago the coming week to attend the convention of the Millers' National Association.

McGeoch's failure carried a good many smaller houses with it. Milwaukee, however, was fortunate enough to steer clear of this deal.

Mr. Mechwart, of the Ganz Roller Co., of Buda Pesth, will meet the millers at the convention in Chicago. He sailed from Amsterdam on the steamer Rhinelander a week ago.

The Nashville Mill Co., of Nashville, Tenn., have ordered a complete 150 barrel roller mill from E. P. Allis & Co. The machinery includes Gray rolls and a Reynolds-Corliss engine. John McCann, of the firm, has been here superintending the plans.

A difference of three cents per bushel is now apparent between July and August wheat, which proves conclusively that money is scarce. By carrying July to August a profit of 13½ per cent per annum can be realized on capital.

E. P. Allis & Co. have removed all their machinery from their Fond du Lac house here, and will discontinue their branch at that place. The recent additions to their works here will enable them to have their entire establishment under their personal supervision. They are running one thousand hands, and are very busy. BRIGHTON.

Milwaukee, June 23.

## ST. LOUIS SIFTINGS.

[SPECIAL CORRESPONDENCE.]

Milling at present in this city is worse than dull, literally nothing doing. The flour corner is a splendid illustration of "patience on a monument," and the number of monuments are many. All sorts of inducements are held out by millers to make sales, but there are no buyers—at least no one will buy. Values, however, hold tolerably firm, having only dropped 10 or 15 cents during the week, and that was more in the nature of concessions than a drop. The output of the mills has fallen off considerably, and averages only about 3,000 barrels. Receipts also have decreased, and fell about 5,000 short of last week. Shipments were very light, amounting to only 24,000 barrels. Wheat receipts show a decrease of 28,000 bus., and of 195 cars inspected, 155 graded No. 2 red, special shipments of that grade having been made hence. The amount of wheat withdrawn for city consumption was 55,000 bus. The wheat market is lower and weak, a decline amounting to 3⅜ cts. on No. 2 having occurred. Red, No. 3, very dull and only a few cars sold on orders. Market closed to-day at $1.10⅜ for No. 2 red, and $1.07 for No. 3.

***

The worst disaster which has ever befallen this section is at present taking place, by the rising of the Mississippi river. For upwards of a week the water has been gradually coming up until it has reached a point not attained since 1858. The water is eight inches to three feet above the crown of the levee, rendering access to boats difficult, and of course imperiling the movement of river freight. Submerged railroad tracks preclude the running of cars from one elevator to another. The American bottom—equaling the valley of the Nile in fertility—was partly submerged all the week. This large cereal region has heretofore been protected by the Madison levee which it was believed impossible to weaken, but which was overcome this A. M., breaks occurring in two places. The water once started, poured over the levees in torrents, flooding the houses and farms of the whole American bottom, making numberless bankrupts of farmers who were preparing to reap the fruits of their hard labor. At the present writing, reports are coming in telling of the wide spread devastation, and losses will foot up to over half a million. Wheat in this section is entirely ruined, and as the waters are heading for the Columbia bottoms, much greater damage is expected. Communication with the east is almost entirely suspended here, only one road, the Indianapolis & St. Louis, having up to the present time been able to keep up its protection dyke intact. The Chicago & Alton dyke broke at noon to-day, and the Wabash road has five miles of its track under water.

***

The Eagle steam mill is shut down this week.

The Crown Roller mill at Belleville has shut down to await the new crop.

The first wheat of this crop was received here last Monday, but was too poor to grind.

The newly reconstructed mill at Rollo, Mo., started up Monday and is doing splendid work.

Cole Bro's. reconstructed roller mill, at Chester, Ill., was successfully started up Wednesday last.

H. D. Rush, of Leavenworth, Kas., has ordered a full line of Prinz dust collectors for his purifiers.

A ten pound girl has arrived at the house of H. E. Richardson, the millwright, who is located at Litchfield.

The Park mill will grind out Saturday, and receive a good brushing up preparatory to starting on the new crop.

The Camp Spring mills have been awarded the contract for furnishing the city institutions with bran and feed for the ensuing year.

General Agent Clark, of the Smith Middlings Purifier Co., passed through this city Thursday on a general reconnoitering tour.

Letters from southern Illinois and Missouri state that farmers are preparing to harvest next week if the weather continues dry and good.

Mr. R. L. Downton will run out to Washington, Mo., on Monday next to start up the Schwegman mill, reconstructed by the Downton Mfg. Co.

The New Minden mill will grind out tonight and be taken in hand by Dehner & Co. to receive improvements. It will be ready for operation in two weeks.

The Camp Spring mill, reconstructed by E. P. Allis & Co., started to grind last Monday, and the fine quality of the flour exceeded the company's most sanguine expectations.

J. Morton Poole, Jr., vice-president of the St. Louis Roller Repair Co., arrived here this week from Wilmington, Del. The company expect to start their shops the coming week.

The mill of the J. M. B. Kehlor Milling Co., at East St. Louis, is shut down. Fears are entertained that the high water will go through the dyke in front of it and flood the cellar.

Geo. T. Zimmerle, of the Milwaukee Dust Collector Mfg. Co., returned to this city from the west last Tuesday, and left Friday for Quincy and Chicago, intending finally to haul up at Minneapolis.

Harvesting in central Illinois will commence Monday. Specimens of the wheat received here to-day show it to be in very good condition, and an average crop is expected, contrary to general opinion.

The City mill, on the levee, owned by the Atlantic Milling Co., has come in for a share of the flood. The water reached the first floor yesterday, but so far no damage of any consequence has been done.

Alex. Smith, of the Victoria mill, John Crangle, of the Anchor, E. O. Stanard, of the Alton City, and G. Sessinghaus, of the Sessinghaus Milling Co., will leave the city Sunday to attend the millers' convention at Chicago.

The Medart Patent Pulley Co. are busy removing to their new building on Main St. where their increased facilities will enable them to triple their output. They are using one of Murphy's smokeless furnaces, and it works finely.

The high water reached the first floor of Kleekamp & Hussmann's flour warehouse yesterday, and they were obliged to remove their stock to the second floor. Fifteen hundred barrels in store at East St. Louis had also to be removed to this side.

Mr. Patrick Egan, of Ireland, arrived in this city Tuesday, and is the guest of Dr. P. S. O'Reilly. He will remain in this city a few days, and will then proceed to Denver, Col. Mr. Egan will address a mass meeting of his countrymen on Sunday.

Our millers' base ball club will leave this city for Chicago next Monday to play a match with a club composed of Chicago millers. The club is agitating the matter of having an excursion, and it is probable that a large number of friends will accompany it.

Messrs. H. B. Eggers & Co., whose mill at Meramac was burnt down last week, have purchased a lot on the corner of Eighth and Clark ave., and will erect a complete new roller mill, containing all of the latest improvements in milling machinery. Messrs. Dehner & Co. are drawing the plans.

Hon. C. H. Seybt, member of the executive committee of the National Millers' Association, arrived in the city from his European trip Monday. He is in excellent health and well pleased with his trip. He mentioned the fact that the stocks of flour over on the other side are yet large, and that export movement may not be looked for for at least sixty days. Mr. Seybt will leave here Sunday evening for Chicago to attend the Millers' National Convention. CARRERAS.

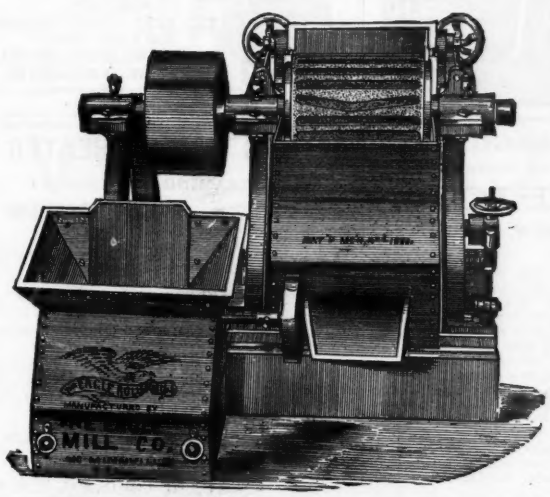
St. Louis, June 23.

Sole Manufacturers and Proprietors of the

# Eagle Stone Roller Mill

—AND THE—

## Rising Sun Purifier



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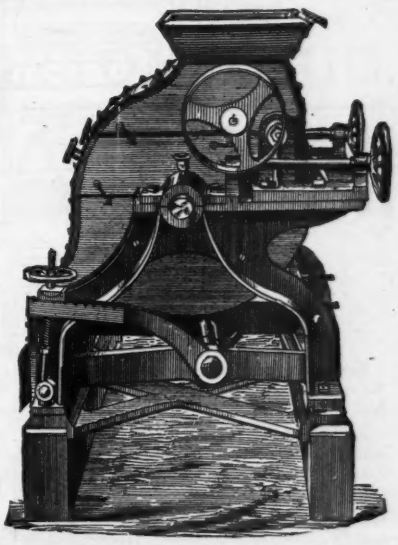
*The* **EAGLE STONE ROLLER** *has no equal for regrinding either first, second or third Middlings or Bran. Beats any Metal or Porcelain Roll. Guaranteed to do so and Fifty per cent. cheaper, quantity and quality considered. Have hundreds in use and certificates in abundance proving our claims. They grind perfectly cool and even, and are easily kept in order.*



## THE RISING SUN PURIFIER

"Away with the Fan and Expensive and Hazardous Dust Room."

THIS PURIFIER IS THE ONLY PERFECT MACHINE EVER INVENTED AND OFFERED TO THE MILLING TRADE FOR PURIFYING MIDDLINGS.

## OUR GUARANTY:

*We propose, with the RISING SUN PURIFIER, to come in competition with any machine now manufactured as a first-ca ss Purifier; to doub e the work of such, ony require one-haf the power, and guarantee the durabiity of our machine equa to a ny other Purifier. We ui sampe Middings with any Purifier in the market with ess waste, wi work a grades of middings, no fan, dust room or air blast being required, and will do this for one-third less money than the price of any other first-class Purifier, when work is considered. This may look like an impossibility to some parties, but we pledge ourselves to back and prove all we claim. Try us, millers. Get the best Purifier in the world. We will give you thirty days to try and see we are no humbug.*

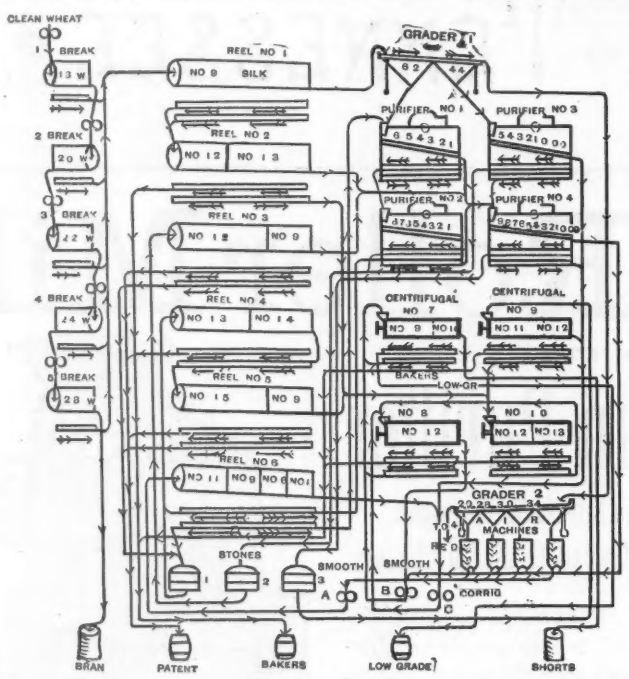
*Address, EAGLE MILL CO., McMinnville, Tenn.*

### Answer to Problem I.

In solving Mr. Shortcrop's problem, I would prefer to use a concentrated roller mill for the breaks, although a number of millers, and perhaps a few millwrights would recommend the old plan of rolls and scalping reels; the latter way is illustrated on the diagram. In connection with his former equipment the following list of machinery should be added to the mill: 1 cockle separator, 1 5-break concentrated roller mill; 2 shaker grading sieves; 2 sieve purifiers; 4 specific gravity air purifiers; 4 centrifugal reels. The wheat should first pass through the separator, then to the cockle machine, and finally through the brush to 1st break roll; rolls to 1st scalper; 1st scalper to 2nd rolls; 2nd rolls to 2nd scalper; 2nd scalper to 3rd rolls; 3rd rolls to 3rd scalper; 3rd scalper to 4th rolls; 4th rolls to 4th scalper; 4th scalper to 5th rolls; 5th rolls to 5th scalper; 5th scalper to bran sack or bin. All break flour and middlings that pass through the cloth on the scalpers go to reel No. 1 clothed with No. 9 silk; flour and dust middlings to reel No. 2; tailings to grader 1.

Reel No. 2 clothed with No. 12 and 13; flour to bakers'; cut-off to No. 10 centrifugal; tailings to 4 purifier.

Reel No. 3 clothed with 12 and 9, fed by No. 2 stone; flour to patent; product of the 9 cloth, to No. 1 stone; tailings to 4 purifier.




Reel No. 4 clothed with 13 and 14, fed by No. 1 stone, and dustings from sizing reel 6; flour to patent; cut-off and tailings to reel 5.

Reel No. 5 clothed with 15 and 9; flour to patent; product of 9 cloth returns to No. 1 stone; tailings to centrifugal 10.

Reel No. 6, clothed with Nos. 11, 9, 6 and 1, fed from sizing roll A; flour to reel 4; product of 9 cloth to No. 1 stone; product of 6 to No. 1 purifier; product of the 1 to 4 purifier; tailings to corrugated roll C.

Centrifugal No. 7, clothed with No. 9 and 10, fed by roll B and cut-off from centrifugal 8; flour to low grade; tailings to shorts.

Centrifugal No. 8, clothed with No. 12, fed by roll C and cut-off from 10 centrifugal; flour to bakers'; cut-off to 7 centrifugal; tailings to roll B.

Centrifugal No. 9, clothed with 11 and 12, fed by No. 3 stone; flour to bakers'; cut-off to 10 centrifugal; tailings to roll C.

Centrifugal No. 10, clothed with 12 and 13, fed by the cut-offs from reel 5, reels 2 and 9 centrifugal; flour to bakers'; cut-off and tailings to 8 centrifugal.

Grader 1, clothed with 62 and 44 gg, fed from tail of No. 1 reel; middlings through the 62 gauze to 1 purifier; through the 44 to 3 purifier; tailings to grader 2.

Grader 2, clothed with 34, 30, 26 and 20 gauze, middlings through each size to air machines; tailings to 4th reduction roll.

Purifier No. 1, clothed with Nos. 6, 5, 4, 3, 2 and 1, fed from grader 1, and product of No. 6 cloth on reel 6; head middlings to No. 2 purifier; cut-off and tailings to 4 purifier.

Purifier No. 2, clothed with Nos. 8, 7, 6, 5, 4 and 3, fed from head of 1 purifier; clean middlings to No. 2 stone; cut-off and tailings to 4 purifier.

Purifier No. 3 clothed with Nos. 5, 4, 3, 2, 1, 0 and 00, fed with the product of 44 gauze on grader 1, and the No. 1 cloth on reel 6; clean middlings to 4 purifier; tailings to roll 6.

Purifier No. 4 clothed with Nos. 9, 8, 7, 6, 5, 3, 2, 1, 0 and 00, fed from tail of No. 2 reel, cut-off and tail of Nos. 1 and 2 purifiers and second middlings from No. 3 purifier; head middlings to No. 3 stone, second middlings to roll C; tailings to roll B.

Air purifiers fed by grader 2; clean middlings to sizing roll A, suction material to roll B.

Stone No. 1 fed with product of 9 cloth on reels 3, 5 and 6; chop to reel 4.

Stone No. 2 fed with first middlings of Nos. 2 and 3 purifiers; chop to reel 3.

Stone No. 3 fed from head of 4 purifier; chop to centrifugal No. 9.

Roll A, sizing roll, fed with first middlings from air machines; chop to reel 6.

Roll B, fed with suction material from air machines, tail of 4 purifier and tail of 8 centrifugal; chop to 7 centrifugal.

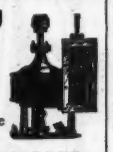
Roll C fed from tail of 6 reel, tail of 8 and 9 centrifugal, tail of 3 purifier, and second middlings of 4 purifier; chop to 8 centrifugal.

The material ground on No. 1 stone is first purified, sized, dusted, and is finally scalped through a No. 9 cloth, which should render it practically free of all impurities without additional bolting. However, it is again bolted through reel 4, which converts it into the whitest and strongest of patent flour.

FRITZ BROWN.

### Action of Buhrs and Rolls.

There is much difference between the color of the flour that comes from the rollers and that which comes from the buhrs, and the reason is apparent when the construction of the wheat grain is taken into consideration. None of the essential oil is lost or escapes by the rollers, and consequently none of it can go back into the flour and discolor it. Rollers with a differential speed give a more yellow flour than roller mills with an equal speed, and rollers made from porcelain give a whiter flour than those made from chilled iron, and so it is with the stone; the stone that has plenty of ventilation will give a whiter flour than one that sweats and has no ventilation. The reasons for this are obvious. There must be a sufficient amount of atmosphere to take up or absorb the essential oil, so that it cannot go back into the flour and discolor it. Porcelain rollers have more cells to absorb the moisture than chilled iron ones, so that when they absorb it at the point of contact, there is ample time for the atmosphere to act on it while the roll is revolving until the same points come in contact again. The difference in color in flour cannot be attributed so much to heating as to the absorption of the essential oil by the starch granules. If a runner be taken up, there will be found in the bedstone and furrows thereof a quantity of fine flour. It will, therefore, be seen that the grinding or granulation takes place on the top of a quantity of fine flour, and the consequence is the flour is simply bruised, the oil sent into the starch, and a dark flour is the result.

"Perfection"

HIGHEST TEST, 85% LOWEST, 82%
This water wheel is now admitted by the best mill owners to be
THE MOST PERFECT IN THE MARKET.
MARK! IT NEEDS NO PENSTOCK
And thereby saves its cost two times over, besides having it where it can be seen and got at.
The best and largest and richest mills have adopted it. 100 wheels sold in 1881, 200 sold in 1882, 400 will be sold in 1883. Just think of it, 300 wheels in two summers. It must be a good one to sell so fast. Send for elegant new book.
C. RIDGWAY & SON, Coatesville, Penn.

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RIVAL STEAM PUMPS

JOHN C. HIGGINS,
Manufacturer and dresser of
MILL PICKS
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Picks will be sent on 30 or 60 days' trial, to any responsible miller in the United States or Canada, and if not superior in every respect to any other pick made in this or any other country, there will be no charge, and I will pay all express charges to and from Chicago. All my picks are made of a special steel, which is *manufactured expressly for me* at Sheffield, England. My customers can thus be assured of a good article, and share with me the profits of direct importation. References furnished from every state and territory in the United States and Canada. Send for circular and price list.

EDWARD KENNEDY
Calls the attention of mill owners and mill men generally to his unrivalled mode of manufacturing and dressing

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After long experience in the business *Can guarantee perfect satisfaction.* A large assortment of picks on hand. All orders promptly attended to.
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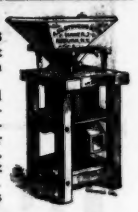
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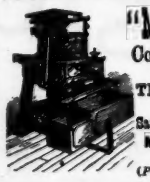
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WITH STEAMING ATTACHMENT.
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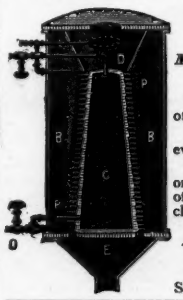

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IMPROVED
Anti Incrustation Compound!
For Steam Boilers is warranted to do all we claim for it—if used as per directions—viz: Stop formation of scales and gradually bring out the old; **prevent foaming** and gritty matter being carried into the cylinder to cause its cutting. It is second to none.
ALL STEAM USERS NEED IT.
Price reduced to 50 cents per gallon in barrels, half barrels and quarter barrels. Correspondence solicited and references furnished. Please give diameter and length of boiler, well or river water and kind of mineral as nearly as possible. Address,
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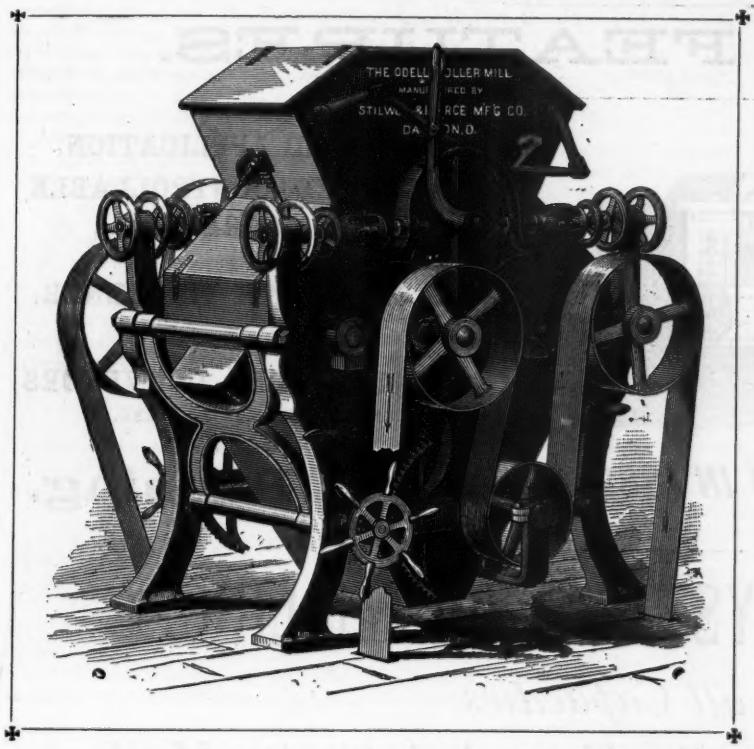
Is now in successful operation in a large number of mills, both large and small, on hard and soft wheat, and is meeting with unparalleled success. All the mills now running on this system are doing very fine and close work, and we are in receipt of the most flattering letters from millers. References and letters of introduction to parties using the Odell Rolls and System, will be furnished on application to all who desire to investigate.

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Invented and Patented by **U. H. ODELL,** the builder of several of the largest and best Gradual Reduction Flour Mills in the country.

### →AN ESTABLISHED SUCCESS!←

We invite particular attention to the following **Points of Superiority** possessed by the Odell Roller Mill over all competitors, all of which are broadly covered by patents, **and cannot be used on any other machine:**

1. *It is driven entirely by belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving belt from the power shaft, thus obtaining a positive differential motion which cannot be had with short belts.*

2. *It is the only Roller Mill in the market which can be instantly stopped without throwing off the driving-belt, or that has adequate tightener devices for taking up the stretch of the driving-belts.*

3. *It is the only Roller Mill in which one movement or a hand-lever spreads the rolls apart and shuts off the feed at the same time. The reverse movement of this lever brings the rolls back again exactly into working position and at the same time turns on the feed.*

4. *It is the only Roller Mill in which the movable roll-bearings may be adjusted to and from the stationary roll-bearings WITHOUT DISTURBING THE TENSION-SPRING.*

5. *Our corrugation is a decided advance over all others. It produces a more even granulation, MORE MIDDLINGS OF UNIFORM SHAPE AND SIZE, AND CLEANS THE BRAN BETTER.*

### We Use None But the Best Ansonia Rolls.

Our corrugation differs from all others, and produces **Less Break Flour, and Middlings of Better Quality.**

Mill owners adopting our Roller Mills will have the benefit of Mr. Odell's advice and long experience in arranging mills. Can furnish machines on short notice. For further information, apply in person or by letter to the sole manufacturers,

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## General Mill Builders and Furnishers,

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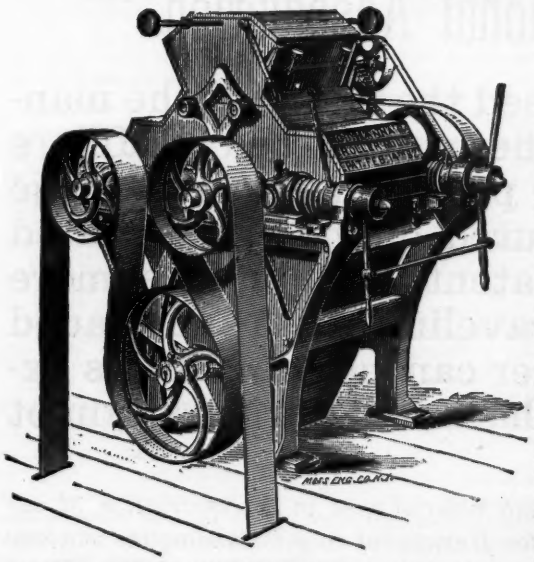
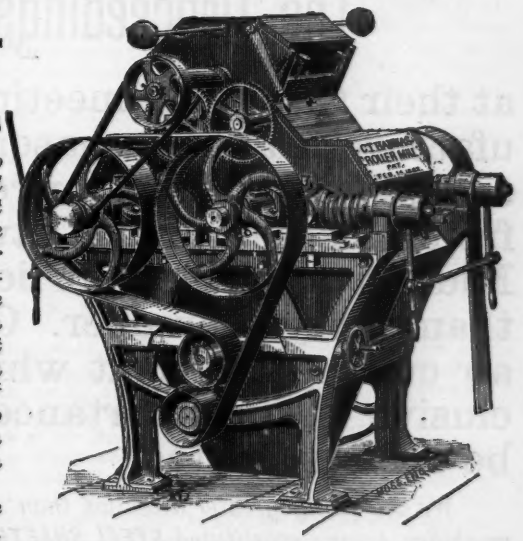
**Pat. Feb. 14th, 1882. Other Patents allowed.**

***CORRUGATED TO SUIT EACH REDUCTION***

*of wheat to middlings and middlings to flour, leaving the bran broad and clean. All the horizontal adjustments are in direct line with line of contact. They are quite easily adjusted, and are positive in their action. The rolls are thrown apart by moving one lever, the reverse movement of same lever bringing them back to place of action again. They have a positive arrangement for keeping the rolls from contact with each other when running empty. Each end of roll has a separate vertical adjustment to keep them parallel with each other and in line with line of contact. They are driven by SUPERIOR belt movement, having large amount of belt surface for the amount of power to be transmitted, hence, no strain or slipping of belts. Have both positive and automatic feed.*



DRIVING END.



DRIVEN END.

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## EXCLUSIVE FEATURES.

PATENTED AUTOMATIC BRUSH

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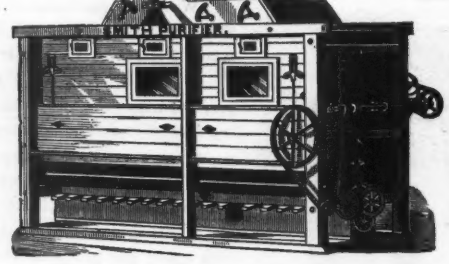
PATENT COIL SPRING ECCENTRIC CONNECTION.

**Easily Adjusted.**



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**Light Running.**

## ADAPTED TO ALL SYSTEMS OF MILLING.

*Fifteen Sizes, Suitable for Mills of all Capacities.*

*Single, Double and Aspirator Machines.*

In the U.S. alone More than **SEVEN THOUSAND** Are Now in Operation.

**SPECIAL NOTICE.** *We guarantee every owner of a* ***GEO. T. SMITH MIDDLINGS PURIFIER*** *absolute immunity from loss by suits for infringement.*

## The Proceedings of the Millers' National Association

**at their Cleveland meeting, held Jan. 31, disclosed the fact that the manufacturers and purchasers of almost every Purifier now offered to Millers are liable to claims for royalty. To secure our patrons against damage from this source we have, at great cost, procured of the Consolidated Middlings Purifier Co. license under all their patents on Purifiers, more than eighty in number. Our license to use the traveling brush and graded air current (without which a successful purifier can not be built) is exclusive. The importance of these facts to purchasers of purifiers cannot be over estimated.**

*We are giving greater attention than ever before to the mechanical details and material used in the construction of our machines, having substituted* ***STEEL SHAFTING*** *for iron, and adopted* ***HARD WOOD*** *for frames; but notwithstanding the immense outlay incurred in securing protection under all existing patents, and the cost of constant improvements,* ***OUR PRICES REMAIN UNCHANGED.***

# Geo. T. Smith Middlings Purifier Co., Jackson, Mich.

## Minutes of the Dust Club.—X.

BY THE SECRETARY.

Bro. Stoneman took the chair at the usual time.

Bro. Edwards: "I would like to discuss the subject of form and color."

Bro. Sullivan: "I have some ideas which may interest Bro. Edwards and every mill owner or miller in the country. It has something also to do with color, so that he can form his own ideas. We have not, I fear, paid sufficient attention to bolting, and the following diagrams will assist me somewhat in illustrating my views, as they show at a glance some of the important stages through which the grain passes in its reduction to flour. Fig. 1 illustrates the first cracking of the berry. If granulated by stones they will be at their maximum distance apart for removing the hairs. The product is then freed from bristles and more or

FIG. 1.

FIG. 2.

less of the outer bran scales, fine flour, and whatever other minute particles may have become detached in running through the stones, after which it is purified as shown by the cut. Fig. 2 is the result of the second cracking, purified also. We have in Fig. 3 the product of the fourth cracking as it comes from between the stones or rolls. The condi-

FIG. 3.

FIG. 4.

tion of the grits, or chop, can be seen in Figs. 6 and 8 before being purified. In Fig. 4 there is a mixture of groats and grits. Fig. 5 is a

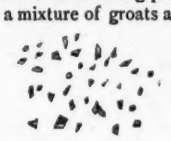

FIG. 5.

FIG. 6.

medium of groats and grits. In Fig. 6 we have grits or semolina No. 1, and in Fig. 7 we have them much finer, or No. 5. Fig. 8 is the bran after having been put through

FIG. 7.

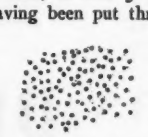

FIG. 8.

a thorough process of scouring. This bran should then be put through a good bran duster. The proportion of flour adhering to the bran by the ordinary mode of milling is indicated by Fig. 9, which presents a portion of a transverse section of white wheat, magnified to 150 diameters. 1, 1, are the coats

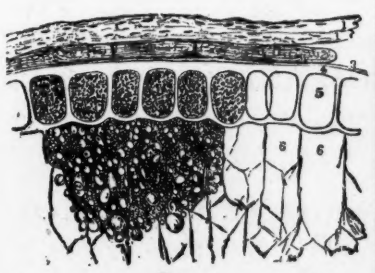


FIG. 9.

of outer true bran; 2 is the inner coat of rute bran; 3, is a thin, filmy coat covering the gluten cells; 4, cellulose containing gluten; 5, sacs of gluten; 6, starch cells. Fig. 10 is an outline drawing of a portion of a longitudinal section of millers' bran, upon a scale of 150 diameters. This is the companion drawing to Fig. 9, which presents a transverse section of millers' bran. This is an accurate drawing, under a camera lucida, and shows the great loss of nutritious matters in ordinary millers' bran. 1, outer true bran; 2, inner true bran; 3, thin membranous coat; 4, coat containing gluten cells; 5, gluten sacs, in outline; 6, 6, starch cells in outline. The separation of the grits from the bran scales of equal size is one of the important points in milling, and the products of different methods of separation are different, and the products differ

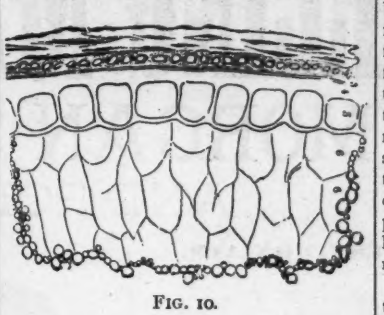

FIG. 10.

from each other in essential particulars. These particulars and present advanced methods of separation will form the subject of another discourse before the Dust Club."

Bro. Mitchell: "It seems to me that we are just beginning to get at the proper subjects for discussion, and on that account, if no other, I am glad we have a practical man in the chair who will incite this kind of debate. You are all aware that there is no subject of more vital importance to man than that of his daily bread, nor one that is more likely to attract his attention when he craves it, and yet the composition of the parts of grains used as food and the functions they perform in the animal system are little understood by most people. Take, for instance, one grain of wheat, and think of the miniature laboratory stored up in it. It has been said by an ancient philosopher that 'nature is a kind and a wise mother,' as she places the most valuable substances of the grain near the air and sun, while the interior is composed of a less valuable material.

"With a moistened towel we can rub off about three or four per cent of a woody fibre which is of no nutritive value, but placed there solely, it seems, for the purpose of protecting the valuable constituents on the inside. Next we strike the storehouse of the valuable mineral and vegetable wealth of the berry. This has been raised atom by atom from the soil, and fitted by the mysterious and silent power of vital force to perform the high office of nutrition in the animal organisms.

"The woody fibre has no nutritious elements, but immediately inside of it is contained all the potash, soda, lime, phosphoric acid, and all the rich ingredients. The great problem millers have to solve is to separate these from the silex which nature has placed to protect them, and which, in consequence, clings to them with all the greater tenacity.

"Let us look at the chemical offices, the substances found in a grain of wheat subserve in the animal economy. Starch is the fuel which, under the influence of oxygen, is to be consumed or burned to obtain animal warmth. It is oxidized in passing as fuel, and the ashes are rejected through the respiratory organs. This combustion produces a warmth which is necessary to the fulfillment of the functions of the body. Of these functions those of digestion and assimilation are the most important. The digestive apparatus receives the gluten and the starch of the grain; the latter is put forward to be burned, the former enters the circulation; and out of its contained iron, potash, soda, magnesia, lime, nitrogen, etc., are manufactured all the important tissues and organs of the body. All of the iron is retained in the blood, together with much of the soda and phosphoric acid. The lime goes to the bones and the magnesia very abruptly leaves the body, as it seems it is not wanted. Such are the uses which a grain subserves in the animal life. Thus it will be seen that the chemistry of a grain of wheat is a comprehensive topic, and to be considered even in its outlines would fill a volume.

"In close relation to, and dependent upon the great agricultural or grain growing industry of this country stands the grain grinding or flouring industry. Through it must pass the products of our golden wheat and corn fields. A mill is one of the first requisites of a civilized community. The aborigine, the native red man of the forest, was the first American miller. His primitive apparatus consisted in the simple mortar and pestle, both composed of stone, by which was crushed merely enough meal for a single repast. Large mortars have been found which must have occupied in that early day, the place of our present custom mill. In Calhoun county, Michigan, one of these exists. It consists in a great block of freestone about fifteen feet long, and five feet wide, hollowed out to the depth of fifteen inches, and having a capacity of about fourteen gallons. Early settlers relate that the neighboring Indians brought corn thither to be pounded or ground in this mortar. The rude machinery employed was composed of a spring-pole attached to a tree near by, from the free end of which was suspended, by means of twisted bark, a large stone for a pestle or pounder. Some large stones, which had doubtless been used for this purpose, were found near the mortar.

"But the Indian has accomplished no more toward the development of the art of milling than he has toward the advancement of any of the other pursuits of civilization. The early settlers on our eastern shores were compelled to at once erect mills of more or less efficiency, for the preparation of meal for the people, as soon as they had grain to grind. Interesting and picturesque relics of these early mills still exist. The old stone mill, sometimes called "the tower," at Newport, R. I., remains as a well known example. The authentic history of this mill dates back to 1639.

"An old iron weather vane is all that remains of what was, in its time, a famous mill in Chester county, Pennsylvania. The vane has, besides the date, 1699, the initials W. P., S. C., and C. P., standing, according to tradition, for William Penn, Samuel Carpenter, and Caleb Persey. The materials for the erection of this mill were brought from England.

"The old mill, hidden in some secluded nook, rumbling and rolling from morning till night, now lingers only as a delicious memory, which is kept green as the moss on the wheel, in the cool and sombre shade of some landscape which we prize.

"Wind and water composed the motive power which propelled the machinery of the early mills. Not many years ago windmills were busily at work on the banks of the St. Lawrence. Some relics of these still remain and add a feature to that picturesque and historic region. But the ponderous overshot and the unreliable windmill have succumbed to the trim and powerful turbine and to the ever ready, restless steam. Some very recent devices for more perfectly utilizing the wind seem to indicate a possible return to that element in localities where water is not accessible and where fuel is scarce and expensive.

"Crumbling and solitary remains of old mills found here and there throughout the country remind the artist that the period is approaching when he will have few such allurements. Visitors at the Centennial will remember the old wind mill of 1776, erected by an eastern milling firm, with peaked roof, shingled sides, and widely swinging arms. It would have reminded the doughty Don Quixote, had he been there, of the remarkable conflict in which he once engaged, and from which he emerged so sadly worsted.

"The flour industry being one which must of necessity keep pace with the increase in the number of bread consumers, rapidly grew with our augmenting population, until it stands today with all the proportions of a gigantic industry. The art of milling does not differ from other branches of manufacture in respect to its development, but has been subject to the same changes which have within the past fifty years characterized them. The best American flour is now conceded by all countries to be the best in the world. The latest development in this art is the system of milling known among the craft as "new process" which, starting in Minnesota, has entered nearly every part of the land, and is being rapidly adopted by even the most conservative millers. The title of the system however seems to be rather a misnomer, inasmuch as it has long been employed in Hungary, where are now found some of the most efficient and thoroughly equipped flouring mills in the world.

"It may be interesting to give an account of the introduction of what is called "new process" or high milling principles in this country. In 1871 Minnesota, now so celebrated for its flour and wheat, had to show a wheat held in very low esteem by millers, and a flour of an inferior grade, worth in the market from $1 to $3 less per barrel than winter wheat flour. Suddenly, and as if by magic, all this was changed, and Minnesota flours immediately sprang into the front rank, and instead of being a drug in the market, wanted by nobody, rapidly became a favorite with the trade, leading winter wheat flour as much as they had previously fallen below them, and maintaining an increasing popularity and excellence up to the present hour. This revolution was all brought about by a change in the system of milling—a change that has given Minnesota its supremacy in the manufacture of flour, and has added at least ten cents a bushel to every bushel of wheat raised in that state, and from two to three millions of dollars to its annual wealth (hear, hear).

"The new process consisted at first entirely in high grinding, and in purifying the material so ground before finally reducing it to flour. Before this, low grinding was the method almost entirely in use up to 1871, and is the method by which the largest amount of flour and the smallest quantity of middlings are obtained by the first grinding, but, as is necessarily the case, a great deal of the outer covering of the wheat, together with the embryo, would be reduced to such fineness as to go into the flour, and a separation would be impossible. The embryo or germ must be removed at all hazards, and various efforts have been made in that direction. This germ is an oily substance, and is by some thought to be injurious to the flour.

"The advocates of high milling rest their claims on the scientific solution of the problem—the reduction of the wheat grain by a succession of alternate crackings and sortings, in which disintegration is effected by successive steps of such slight advance, and the graduations of the successive products are so fine that the heat produced is inconsiderable and the ultimate product of the flour free from specks. The significance of the peculiarity of this process cannot be over estimated. It leaves the integrity of the cells of gluten unimpaired. They have, therefore, their natural investment of cellular tissue to protect the sensitive nitrogenous constituents of the interior from the oxygen of the air and from the spores of microscopic vegetation always afloat in the atmosphere. Having escaped destructive crushing, they have also escaped the heat attendant upon it and the loss of water and chemical composition due to it. As the chemical changes consequent upon this exposure of the gluten bring with them products of disagreeable taste and smell, the flour produced by high milling has escaped the deterioration consequent upon the destruction of the texture of the gluten cells. From the researches of Mege Mouries and other eminent chemists, it would appear that the gluten coat of the grain contains a nitrogenous constituent of great susceptibility to fermentation upon the application of water, in which it is soluble. This body, so long as the cells containing the gluten remain intact, is protected from the moisture of the air. The importance of maintaining these cells unbroken in the flour until it is to be converted into bread, can thus be seen and understood. I do not propose to go further into the subject at present, but will, at a future meeting, take up the subject where I have now left off and give you my notions of the newer and more improved methods in use at the present day."

Bro. Buhrstone: "It seems to me that we are getting up to our depth, and in future we shall have to be more careful of the manner in which we treat our subjects."

The Chair: "We have not yet touched the edge of milling. It will take us some time before we get through with the different systems, the various methods of separation, and the reasons why."

The meeting then adjourned.

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A patent is an official document purporting to convey exclusive right "to make, use and vend" the particular thing for seventeen years. The actual protection depends upon the money resources, aggressiveness and tenacity of the holder in fighting out his case. Having sold a certain industrial field, the United States declines to keep off trespassers or to warrant the title it conveys. This title is becoming less presumptive, and the presumption is even getting the other way in case of freshly issued patents which are not in a new field of art.—*New York Times.*

# TWO PERFECT MILLING MACHINES

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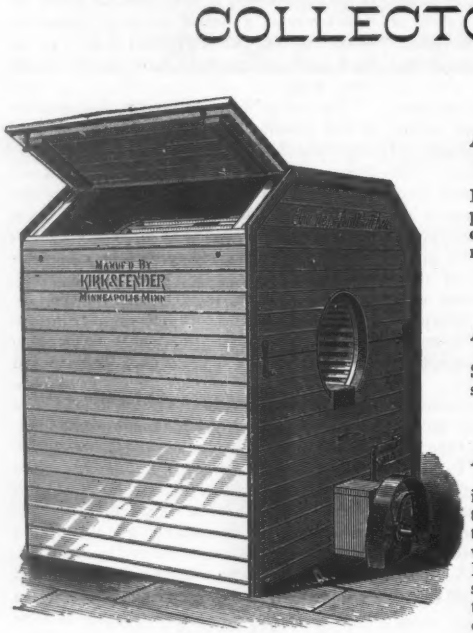



SEND FOR PRICES.

MINNEAPOLIS, Minn., Oct. 30, 1882.

*Messrs. Kirk & Fender, Manufacturers of Morgan's Wheat Cleaners and Scourers, Minneapolis, Minn.*

GENTLEMEN: * * * Would not be without them for anything. I can see that my bolting capacity has increased largely; the same with my purifiers. The only way I can account for this is that my wheat is well cleaned. I do not have any oats or fine fuzz to contend with, consequently my bolts and purifiers work free and open.

W. H. HELFRICH, Head Miller "Anchor" Mill.

MILWAUKEE, Dec. 5, 1882.

*Messrs. Kirk & Fender, Minneapolis, Minn.*

GENTS: * * * We have been running both the Morgan Scourer and Polisher for the past 14 years, and up to the present we consider them the best in the market. Respectfully yours,

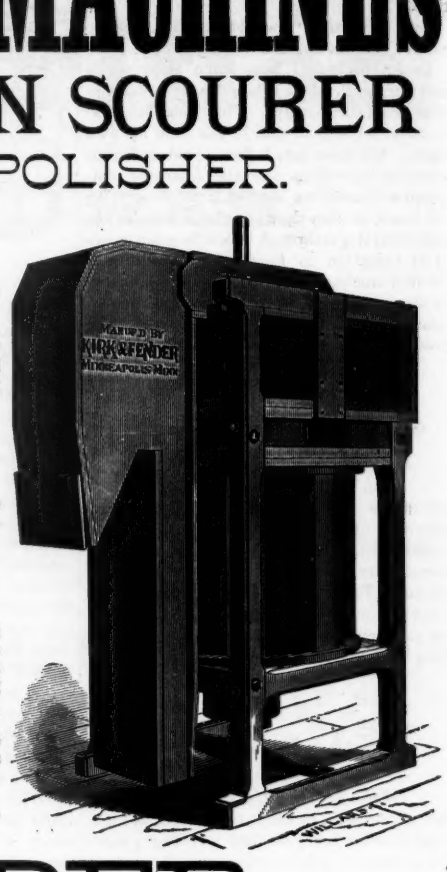
C. MANEGOLD & SON.

WILMINGTON, Del., March 1, 1883.

*Messrs. Kirk & Fender, Minneapolis, Minn.*

GENTLEMEN: We have had the Peerless Dust Catcher about six weeks; it is giving the best of satisfaction. We are working it on a purifier which takes its middlings from the head end of the coarse grader. The dust from this grade of middlings is the softest, stickiest material in the mill, being worn off the coarse middlings while traveling in a conveyor to the grader. It has given us no trouble whatever, more than to oil it once a day, and I say, without fear of contradiction from any one who will examine or give the machine a trial, that it is the best machine ever offered to the millers of America for the purpose of collecting the dust drawn out of a purifier.

Yours truly, O. H. TITUS,
Head Miller of the Wm. Lea & Son Co.'s Mills, Wilmington and Newcastle, Del.

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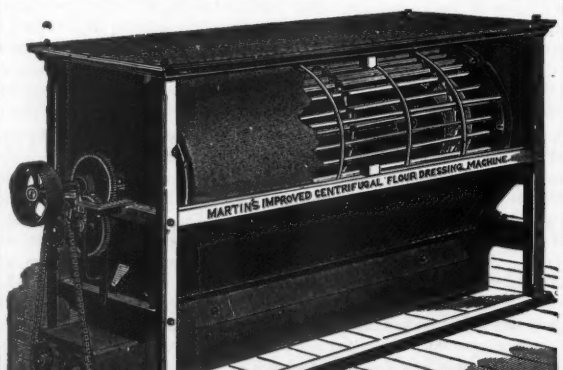
***THE CENTRIFUGAL** has more than FOUR TIMES the capacity of the ordinary reel, and will make clear flour and a clean finish on stock that cannot be treated in the common reel without loss, no matter how much silk it is passed over.*

***IT IS SPECIALLY ADAPTED** to handling soft, re-ground material, full of light impurities, whether from rolls or stone.*

***IT IS VASTLY SUPERIOR** to the common reel for dusting middlings.*




***IT IS INDISPENSABLE** to a CLOSE FINISH in any system of gradual reduction milling, and will improve the quality of the low grade flour at the same time it makes the offal cleaner.*

***IT MAKES A CLEAN SEPARATION** on caked and flaky meal from smooth rolls, which no other style of reel can do.*

***THEY CAN BE USED TO ADVANTAGE** as a complete system of bolting, to the exclusion of the ordinary reel.*

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## Adulteration of Flour and Means of Detection.—II.

The adulteration of flour seriously affects the miller. It is therefore important that he should be well versed in the many sophistications resorted to after the flour has passed out of his hands.

It is to be regretted that adulteration is resorted to in the making of bread, but such is, and always has been, the depravity of mankind that adulteration has been practiced in every civilized country in one way or another from the remotest times. There is, however, a class of alarmists in the community who, when they have nothing else to say about bread, declare that the water with which it is made is impure, or impregnated with animalculæ or something else. The cry of fire is enough to make an audience rush to the doors without waiting to ascertain whether there is any fire or not. So the public are easily alarmed by the charge of adulteration and are ready to accept without inquiry the evidence for the prosecution. It does not require the aid of science to raise some skepticism in any reflecting mind. Fontenelle was told that coffee was a slow poison. "Very slow, indeed," he replied, "for it has been sixty years in killing me." So that when medical men tell us that we have been swallowing poison every day at breakfast, dinner and tea, we are apt to ask ourselves whether our experience is in accordance with his assertion. Miss Acton, author of "Modern Cookery," wrote a book on bread in 1856, but she, too, was an alarmist and caught up the popular cry of adulteration and injured her book by a number of statements mostly borrowed from ignorant or interested persons, and not having much knowledge of the subject she undertook to write a book on, except as to the receipts, easily fell into the error. She has a long chapter on "the present system of adulteration and its consequences." The details of the different descriptions of bread making may be learned from the receipts in Miss Acton's book, but her denuncinations can be very profitably neglected. She was misled by half-informed people, who tried to make a reputation for themselves by attacking that of the bakers. There are persons who are said to be afraid to move, after studying anatomy, for fear of deranging machinery so fearfully and wonderfully made. Those who give implicit faith to the statements of Miss Acton and other alarmists, would, we should conceive, be afraid to eat. No doubt there is a good deal of roguery practiced, but not to the extent represented and there are some practices in occasional use which it would be desirable should cease. The sooner mechanical agencies are used for kneading bread and superseding the use of feet and hands, the better. This is the chief evil to be complained of in the American metropolis, and for aught we know in other large cities and towns. This question of adulteration is not new however. Smollett, in his "Humphrey Clinker," told the same tale in 1770. It is thus he describes the bread and victuals of London:

"The bread I eat in London is a deleterious paste mixed up with chalk, alum, and bone ashes, insipid to the taste and destructive to the constitution. The good people are not ignorant of this adulteration; but they prefer it to wholesome bread, because it is whiter than the meal of corn. Thus they sacrifice their taste and their health, and the lives of their tender infants, to a most absurd gratification of a misjudging eye; and the miller or the baker is obliged to poison them and their families in order to live by his profession. The same monstrous depravity appears in their veal, which is bleached by repeated bleedings and other villainous arts, till there is not a drop of juice left in the body, and the poor animal is paralytic before it dies; so void of all taste, nourishment and savour that a man might dine as comfortably on a white fricassee of kidskin gloves, or chip hats from Leghorn. As they have discharged the natural color from their bread, their butcher's meat and poultry, their cutlets, ragouts, fricassees, and sauces of all kinds, so they insist upon having the complexion of their pot-herbs mended even at the hazard of their lives. Perhaps you will hardly believe that they can be so mad as to boil their greens with brass half-pence, in order to improve their color; and yet nothing is more true. Indeed, without this improvement in the color they have no personal merit. They are produced in an artificial soil, and taste of nothing but the dung hills from whence they spring. As for the pork, it is an abominable carnivorous animal, fed with horseflesh and distillers' grains; and the poultry is all rotten in consequence of a fever, occasioned by the infamous practice of sewing up the gut, that they may be the sooner fattened in coops."

This is a lively sketch of London trades people and highly characteristic of Smollett. Now in case there is a deleterious adulteration to any extent in flour, which we deny, and this denial comes from a knowledge derived from a lifetime in the business, we say in case there is, whose fault is it? Why it is the fault of the very people, who cry out against it. The fault of the public who won't take anything but a white flour and white bread.

Adulterations are of two kinds: The first is the employment of materials to increase the bulk and weight of articles, the adulterations being, of course, cheaper than the articles to which they are added. This is the most frequent. The second is the addition of materials to improve the appearance and color. Some twenty-five years ago a quack doctor made his appearance in Paris, and sought fortune and notoriety by publications upon almost all subjects, and attacked industries by the theories of science. This doctor made many fruitless attempts to make bread from potatoes, starch, rice, and even sawdust mixed with these substances, as being analogous to gluten, and when he could get no one to support him, he issued a treatise denouncing all the bakers of Paris, whom he accused of fraudulently using the same process of bread making which he previously contrived and recommended, and which he next discovered to be unhealthy. M. Boland, the celebrated French baker, mentions a similar case. He says:

"There was some effect produced by a treatise of M. Kulmann, upon the dangerous adulterations of flour and bread practiced in the department of the north, in Belgium and England. On account of this publication, at the slightest green spot in the crust of the bread, every one believed that it was due to the presence of a salt of copper. Upon this deceptive appearance, numerous complaints were made to the authorities, one among them against a baker of the Faubourg Saint Antoine. This gentleman had to submit to a domiciliary visit from the police, the seizure of some bread taken hap-hazard, and of samples of all the materials used for bread making, which were immediately sent to the board of health, which gave them in charge to one of the most eminent of its members in making analyses. This scientist, to whom the examination was confided, did me the honor of inviting my assistance in his experiments, which were all made with remarkable care, exactness, and impartiality. The water, flour, bread, salt, leaven, and yeast, passed successively from the hands of the scientist to the apparatus, and thence to the reagents. Finally, he acknowledged in the fullest manner, that the flour not only did not give any trace of adulteration, but furthermore that it was made of excellent wheat and was the result of a perfect manufacture, which left nothing to be desired so far as bread making qualities were concerned, and which was free from all foreign substances, especially from those which are injurious to health. The green spot which had been noticed on one of the loaves came from the moisture in the place where it had been put and allowed to remain several days immediately after coming from the oven. In this unfortunate affair the police made honorable acknowledgment, without noise, and with alacrity, but also with discretion and all the precautions showing its solicitude for public interests. Science virtually accomplished its end in revealing the truth. But the exoneration effaced with difficulty in popular opinion the traces of the accusation, to which perhaps an envious spirit had given publicity. Be that as it may, this baker had to suffer for a long time, both in honor and in interests.

M. Boland also states that salts have the property of renewing the edges of each molecule of gluten, torn in the operation of milling, and of restoring its cohesion and elasticity when only partially injured, and adds that sea salt produces this result in a remarkable degree. That flour is occasionally adulterated by unscrupulous persons we won't deny, and the following simple analysis for its detection is thus given by Dumas:

"Take a given weight, say one hundred grains, of the flour to be examined, make it into a stiff paste with a small quantity of water, and place it in a piece of fine muslin. The whole is then to be placed in a small evaporating basin (or in lieu, an ordinary kitchen basin) of water, and carefully kneaded; a fresh quantity of water is now to be poured into the basin, previously placing that in which the paste had been kneaded in a tall glass. The washing and kneading are to be repeated until the water ceases to be milky. On examining the piece of muslin, it will be found to contain a whitish-grey, elastic, tenacious substance, which is gluten.

"The liquid in which the dough was kneaded must be allowed to repose until all has deposited that will, and the supernatent liquid becomes clear. It is then to be poured off, and the starch remaining at the bottom of the vessel carefully dried and weighed.

"The clear liquid, separated in the last operation, is to be boiled, when pellicles will form upon its surface, which will contract into greyish flocks, and have the most perfect analogy with coagulated albumen. This is vegetable albumen.

"The whole is now to be poured upon a filter; the albumen will remain on the filter; the liquid is to be evaporated by a water bath heat until perfectly dry. This residue contains sugar, and a gummy matter analogous to dextrine.

"The rough gluten obtained by the first process may be examined as follows, when it will be found to break up into four distinct substances.

"The gluten is to be boiled first with concentrated, and then with weak spirit of wine; a greyish residue remains, which is vegetable fibrine.

"The alcoholic solutions are to be allowed to cool, during which process a flocculent substance falls, possessing a great number of the properties which characterize caseine.

"Lastly, the alcoholic liquids are to be evaporated to syrupy consistence; if water be now added, a pasty substance falls which is glutine.

"A fat matter precipitates with the glutine, which is readily separable from it by means of ether.

"Here we see that flour contains—1. Albumen, 2. Fibrine, 3. Caseine, 4. Glutine, 5. Starch, 6. Glucose (sugar of grapes) and dextrine, 7. Fatty matter.

"The analysis just described is, however, more particular than need be; it is sufficient for all practical purposes to estimate the rough gluten, the starch, the sugar and dextrine, water and bran.

"The course is then as follows:

"One hundred grains of the flour to be examined is a sufficient quantity to operate upon.

OPERATION 1. "Pass the flour through a fine sieve to separate bran, and weigh it.

2. "Place one hundred grains in an evaporating basin in a water bath, allow it to remain about two hours; weigh it, the loss is water.

3. "Knead one hundred grains in a piece of muslin; dry the gluten so obtained, and weigh it.

4. "Collect the starch, as just described; dry, and weigh it.

5. "Evaporate the liquid poured off the deposit of starch to dryness; weigh the residue—it is mixture of sugar and dextrine; it is not worth while to separate them but if it be wished to do so, add alcohol, which will dissolve the sugar and leave the dextrine. The sugar may be obtained by the evaporation of the alcoholic solution."

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While a number of men were dragging the river at Appleton, Wis., on the 20th inst., for a drowned boy, an old mill fell in, knocking down one end of the bridge and killing Mike Sullivan, aged eighteen years. One boy, who was standing near, dove to the bottom of the river and was saved. Search was instituted among the debris, it being feared that others had been caught. The damage to property was about $6,000.

## Manitoba and the Canadian Northwest.

[SPECIAL CORRESPONDENCE.]

We have little of general interest to report at the present time. Our city mills are quietly at work, supplying the demands of local trade, and we anticipate that local lines of business will keep them pretty well employed during the remaining summer months.

Following a remarkably favorable seed time, we have had genial and frequent rains, and though, on account of cold winds, vegetation is somewhat backward, we have reports from all quarters in the highest degree satisfactory and hopeful. I have recently returned from a trip out west and can testify to the promise of an abundant crop. In no year since farming fairly started here, have prospects looked so bright, and with a continuance of favorable weather, farmers everywhere anticipate a yield this season superior in quantity and quality to anything they have reaped heretofore.

The deputy minister of agriculture for the province has arranged a system of crop reports from all the settled districts. These returns will embrace every point bearing on the coming harvest, and from these I trust from time to time to supply you with such information as will enable your readers to approximate with some degree of accuracy the product of the coming season.

An enthusiastic meeting was held here last week for the purpose of organizing an association which will henceforth be known as, "The Winnipeg Grain and Provision Exchange," and which will be composed entirely of members directly engaged in these lines of business. In view of the coming importance of Winnipeg as a grain centre, such an institution was felt to be a necessity, the meeting being clearly of the opinion that many matters of importance already pressing could better be handled by combined action than by individual effort. The new exchange, while preserving a distinct individuality, enters into its work as a helpmeet to the city board of trade in all matters relating to trade and commerce. The first president of the new organization is Mr. D. H. McMillan, proprietor of the City flour mill, and the secretaryship has been undertaken by Mr. Geo. J. Maulson. With two such efficient officers, the Winnipeg grain and provision exchange will doubtless soon be in good working order, and must ere long prove a boon to both city and province. W. C.

Winnipeg, June 18.

## Decoy Advertising.

We hear in some quarters complaints about dullness of trade. To manufacturers who find orders not coming in, and who yet desire to simulate the appearance of doing considerable business with prominent establishments, for the purpose of inducing other establishments to buy, we might commend the enterprising example set by an engineering weekly published in Chicago, and now completing its fifth (half-yearly) volume.

The weekly in question, which, by the way, has the rather unusual feature of being dated on Friday, appears to be in the habit of carrying non-authorized advertisements in its columns, presumably for the purpose of enticing other advertisers to invest their money where otherwise they would not be likely to do so.

Our attention has at different times been called to this system of manifest deception, by establishments of high repute, who find, to their surprise, their advertisements paraded in the columns of the weekly referred to, without their consent and without their previous knowledge, and who do not desire to figure as decoys in deceiving others. Exactly what plan of redress is open to firms who object to the use of their names in this manner is not clear; but it would seem that genuine advertisers who are induced to invest their money through the parade of unauthorized advertisements should have some measure of redress open to them in the statutes relating to obtaining money under false pretenses.—*American Machinist.*

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Regular daily calls in the New York metal exchange began Monday, and contracts for pig iron will, it is believed, be fixed at a minimum of 100 tons, with margins at two dollars per ton. Storage arrangements which will reduce the cost of carrying pig iron are made.

# PRAY MFG. COMPANY

MINNEAPOLIS, MINNESOTA.

## Gradual Reduction Roller Mills

**COMPLETE,**

***CORRUGATED AND SMOOTH ROLLS,***

## CENTRIFUGAL REELS,

**Caldwell Coveyor Kept in Stock.**

**ALL KINDS OF**

## MACHINES FOR DRESSING WHEAT & FLOUR.

## STEAM AND WATER PUMPS,

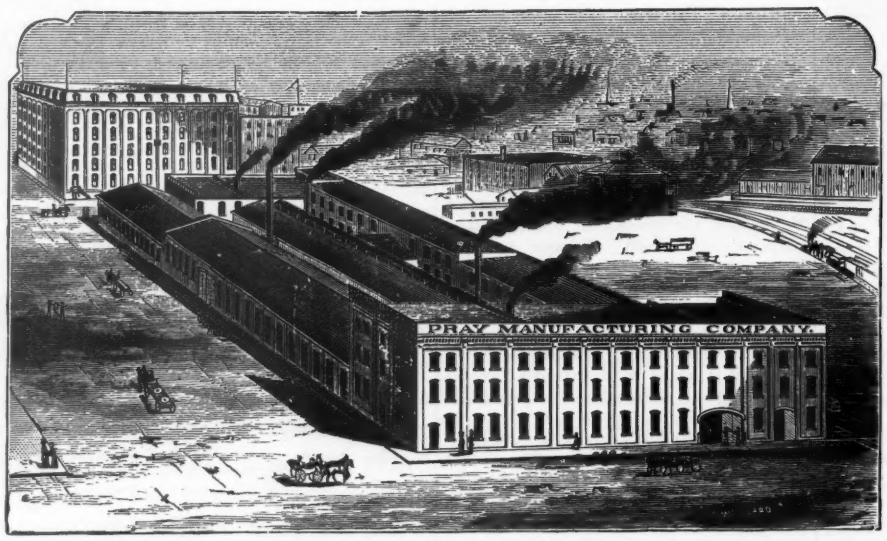
For City Supply and Fire Protection.

## ARCHITECTURAL CASTINGS,

**SHAFTING, HANGERS, BOXES,**

## Bolts, Pulleys and Gears.

Hoffeld's Celebrated Leather Belt. Solid Woven Cotton Belt.




Jack Screws. Wagon Lifters. Rolls Re-Corrugated. Rolls Re-Dressed.

# MACHINE SHOP AND FOUNDRY.

## The Old Reliable Dufour & Company's Bolting Cloth,

**The Only Genuine Article in the Market.**

**PLANS, SPECIFICATIONS AND PRICES, FOR FLOUR AND SAW MILLS, THAT CHALLENGE COMPETITION, FURNISHED ON APPLICATION.**

**Our Plans are Invariably Adopted when Placed in Competition with Others.**

## THE GEO. T. SMITH MIDDLINGS PURIFIER.

**Write for Descriptive Circular and Price Lists to Northwestern Agents, with**

*Headquarters* 401 *First Street South, MINNEAPOLIS, MINN.*

## PRAY MANUFACTURING CO.

### Cooper's Chips.

Jas. Kennedy, on Main street, E. D., is working only three or four men.

Four thousand dollars worth of staves and barrel headings of Samuel Dartforth's, were recently burned near Napier's bridge, at St. Joseph, Mich. There was insurance of $1,500.

The planing and stave mill of J. Seligman, at East Saginaw, Mich., occupied by J. Y. Chapman, was recently destroyed by fire. Seligman's loss was $5,000; insured. That of Chapman was $3,100, with $1,625 insurance.

The Austin *Register* says: "C. N. Beiseker, our enterprising cooper, is full of business these days. He has manufactured so far this season about 7,000 butter tubs, and expects to reach in round numbers, 12,000 tubs, before the close of the year."

The Hall & Dann shops are running nearly the same as last week, turning out about 2,200 barrels per day. The cooper business with them is perhaps not quite as brisk as it has been, and there is a prospect for rather a quiet time during the six weeks to come.

### Illinois Inspection.

The recent passage by the Illinois legislature of the bill providing for the appointment of a state weighmaster in all cities of the state where there there is a state inspection, to be named by the railroad and warehouse commissioners, has given rise to a great deal of comment in Chicago, says the *Times*, especially in board of trade circles. Sentiment on the question is divided, and while it is looked upon by some as a good thing, by others the bill is regarded with the utmost disfavor. Heretofore the weighing of grain or other property liable to inspection has been performed by an inspector selected by the members of the board. The plan has met with the general approval of grain dealers, and shippers who are loath to see a matter in which they are so directly concerned taken out of their hands. Under the new law, it is claimed, they will have no control over the matter, and their property will be handled by and will be practically at the disposal of parties whom they do not know. It is also intimated that the new law does not bind the railroads to any obligations, and the bill was manipulated by the attorneys for the railway companies. As a further objection, it is urged that what properly belongs to interests purely commercial has been taken away from where it belongs and made a part of the political "machine," giving, as it does, the appointing power to the executive.

### Our Breadstuff Exports.

The exports of breadstuffs during the month of May, 1883, and for the past 11 months, and corresponding time in 1881–2, were:

| Articles. | May, '83. | July 1, '82, to May 31, 1883. |
|---|---|---|
| Flour, bbls. | 591,554 | 8,472,889 |
| Wheat, bus. | 2,972,397 | 101,397,258 |
| Corn, bus. | 6,332,156 | 34,378,067 |
| Oats, bus. | 19,738 | 258,484 |
| Rye, bus. | 565,766 | 1 804,290 |
| Barley, bus. | 51,932 | 395,480 |
| Corn meal, bbls. | 22,748 | 234,982 |

| Articles. | May, '82. | July 1, '81, to May 31, 1882. |
|---|---|---|
| Flour, bbls. | 427,514 | 5,291,786 |
| Wheat, bus. | 5,296,836 | 88,422,786 |
| Corn, bus. | 1,235,555 | 42,077,849 |
| Oats, bus. | 16,851 | 497,969 |
| Rye, bus. | 101,868 | 867,642 |
| Barley, bus. | 3,795 | 192,437 |

The Iowa agricultural department says the corn crop of that state is 13 per cent better off than it was at this time last year, but recent rains may have a bad effect, and the crop will not be a full one. In round numbers, placing the area at 7,000,000 acres, the product is given at 200,000,000 bushels. Winter wheat is 87 per cent, spring, 100 per cent, and compared with last year, 16 per cent better. With a favorable season and no insects in July, the product will reach 22,000,000 bushels. The oat crop promises to be the largest ever harvested in the state, probably yielding 70,000,000 bus.

In ordering the second "Minneapolis" centrifugal reel, J. W. Gift & Co., of Peoria, Ill., write to Willford & Northway as follows: "Your machine has raised our low grade fully fifty cents per barrel over the old way of dressing it."

## MILLING NEWS.

The wheat crop of California is estimated at 56,000,000 bus.

The Melrose, Minn., flouring mill is running at its full capacity.

U. H. Odell, of Dayton, O., has been issued a patent on a grinding mill.

Jas. B. Conrad, Smith Mills, Pa., has received a patent on a belt tightener.

O. W. Tresselt, of Fort Wayne, Ind., has been granted a patent on a roller grain mill.

A patent has been granted to Henry G. Hall, of Fayetteville, N. C., on a flour or bran packer.

E. M. Hale says that Spink & Berkley of Danville, Ill., are making 100 bbls. of flour per day with two runs of stones.

In the east bound rail shipments from Chicago last week, there was an increase in flour of 55 tons, and in grain a decrease of 603 tons.

Two warehouses at Ossian, Ia., belonging to R. N. Sawyer, were destroyed by fire on the night of June 20. Loss, $3,000; no insurance.

By the burning of Somermeyer's brewery at Eau Claire, Wis., 3,000 bus. of barley were destroyed and a loss of $25,000 was entailed. Insurance, $16,000.

L. Seligman's mill at Marseilles, O., was recently burned, the fire originating, it is supposed by spontaneous combustion. Loss $15,000; insurance $6,500.

Rodney J. Hardy & Co., grain, flour, wool, and produce dealers of Boston have failed. Liabilities and assets not known. The indebtedness is chiefly in the west.

M. S. Nichols & Co., a Chicago grain firm which suspended from the effects of the McGeoch failure, have resumed, it having a strengthening effect on the Chicago market.

The North Star mill at Oshkosh, Wis., which was recently burned, will be rebuilt at once by C. Smith. The loss was $24,500 and the insurance $15,500. Wm. Fronlin is head miller.

David Gruby's elevator at Waldron, Ind., was burned on the night of the 21st, the fire being of incendiary origin. Loss, $5,000 on building and $8,000 on grain. Insurance, $10,000.

D. C. Freeman, representing Lindblom & Co., of Chicago, at Louisville, Ky., has suddenly disappeared, and is reported to be short with the above company to the amount of $10,000.

The capital of the Grand Forks, (Dak.) Roller Mill Co., has been increased to $100,000. The capacity of the mill will be increased to 500 barrels a day.

E. S. Magill is under indictment at Chicago for forging in 1877 a contract for the delivery of 5,000 bus. of corn purporting to be signed by S. H. McCrea & Co., by whom Magill was employed as a settling clerk.

A steam flour mill, belonging to the crown, with a large amount of other property, on the island of Gutujewsky, at the mouth of the Neva, in Russia, was destroyed by fire Monday. Total loss, 1,500,000 roubles.

B. Jenkins & Co., millers of Delphi, Ind., have failed, causing much excitement in the place, as it involves many countrymen. The liabilities will probably reach $50,000, while the assets are meagre. The book-keeper has left town.

Francis Taggart, of Brooklyn, N. Y., has taken out a patent on apparatus for disintegrating grain, etc. C. W. Walters, of Richmond, Ind., has likewise taken out one on a flour packer, assigning to the Richmond City Mill Works.

A fire on Saturday at McGregor, Ia., destroyed the elevator of Bassett, Hunting & Co., and the warehouse of Gilchrist & Co., involving a loss of $50,000. Bassett, Hunting & Co. had an insurance of $32,150, and Gilchrist & Co. $2,700.

The firm of Ames Bros., of the Austin (Minn.) Foundry and Feed Mill Manufactory, has been dissolved by mutual consent, D. J. Ames succeeding to the entire business. E. J. Ames will continue to be employed at the foundry for the present.

In one day recently, 17,500,000 bus. of wheat changed hands at the New York Produce Exchange. There were also heavy deals in corn, 3,000,000 bus. changing hands. The deals in wheat represented $21,000,000, the business done in grain being the largest in the history of the exchange.

Following shows the visible supply of grain on the dates named in this country and Canada:

| Articles. | June 16, 1883. | June 9, 1883. | June 17, 1882. |
|---|---|---|---|
| Wheat, bus. | 20,618,969 | 20,582,466 | 10,230,307 |
| Corn, bus. | 14,923,541 | 14,617,432 | 9,385,906 |
| Oats, bus. | 4,558,738 | 4,323,580 | 1,968,975 |
| Rye, bus. | 1,774,750 | 1,732,508 | 934,497 |
| Barley, bus. | 477,408 | 474,249 | 144,985 |

The railroads at Chicago are thinking of forming a city grain weighing association, that more accurate weights may be secured, if private enterprise does not step in and do so, as has been talked of. The railroads claim that they lose in over weight enough to pay the expense of the work and leave a profit besides.

Following were the weekly imports into the United Kingdom on the dates named:

| Articles. | Week ending June 16, 1883. | Week ending June 17, 1882. |
|---|---|---|
| Flour, bbls. | 80,000@ 85,000 | 75,000@ 80,000 |
| Wheat, qrs. | 305,000@310,000 | 215,000@220,000 |
| Corn, qrs. | 155,000@160,000 | 125,000@130,000 |

The annual report of the Manitoba agricultural department shows that the average production of cereals per acre last year was: Wheat, 32 bus; barley, 37 bus; and oats, 51 bus. For the Past seven years the average yield of wheat has been 29 bus. per acre, of barley 39 bus. of oats 57 bus. and of botatoes 294 bus.

Capt. A. Morehouse, a carpenter who attained quite a military record during the war, and whose people live at Pine Island, Minn., fell from a scaffolding Friday, while at work on Pillsbury & Hulburt's elevator at Neche, Dak., and sustained injuries from which he cannot recover. He struck on his back, breaking it, and was severely hurt internally.

The following were the receipts and shipments last week at and from Chicago:

| Articles. | Receipts. | | Shipments. | |
|---|---|---|---|---|
| | 1883. | 1882. | 1883. | 1882. |
| Flour, bbls. | 59,364 | 41,464 | 49,044 | 36,333 |
| Wheat, bus. | 239,931 | 58,525 | 157,634 | 509,654 |
| Corn, bus. | 1,487,230 | 836,501 | 1,571,198 | 1,417,238 |
| Oats, bus. | 749,360 | 489,384 | 693,330 | 487,441 |
| Rye, bus. | 74,511 | 11,129 | 142,913 | 51,603 |
| Barley, bus. | 26,005 | 32,023 | 12,085 | 6,889 |

E. P. Allis & Co., of Milwaukee, were recently given an order by the Jewell Milling Co., of Brooklyn, for 33 pairs of rolls, to be used by the Jewell people in increasing the capacity of their mill in the fall or winter, if needed. The general system will be the same as now, an addition simply being made. The Jewell mill makes the first four breaks on Jonathan Mills machines, and three others, including bran, on rolls.

The Sanborn Lumber & Elevator Co., with capital stock of $500,000, has been organized at Sanborn, Dak., and four elevators with capacities ranging from 35,000 to 75,000 bus. will be erected at once, that they may be ready for the new crop. These four elevators will be of the Barnett pattern, and will be located between Cooperstown and Sanford. The Paige Mfg. Co., will furnish all the machinery, including engines, boilers, etc.

The accompanying table exhibits the receipts at Chicago, Milwaukee, Detroit, Cleveland, Toledo, and Duluth from Aug. 1, to June 16, in the years named:

| Articles. | 1882-83. | 1881-82. | 1880-81. |
|---|---|---|---|
| Flour, bbls. | 7,924,932 | 7,263,250 | 7,709,548 |
| Wheat, bus. | 55,581,575 | 32,181,009 | 61,231,525 |
| Corn, bus. | 59,079,124 | 71,217,281 | 80,364,277 |
| Oats, bus. | 34,133,479 | 22,871,897 | 29,583,005 |
| Barley, bus. | 15,116,365 | 10,952,835 | 10,682,457 |
| Rye, bus. | 3,625,962 | 3,234,421 | 2,540,323 |
| Total gr. bus. | 167,536,505 | 140,457,443 | 184,401,587 |

The *Vidette*, of Spring Valley, Minn., says of its grain buyers: "No 'storage and commission' about it. The Grange elevator, costing $5,000, is owned by Brass & Graling and its capacity is 25,000 bus. Elevator No. 3, controlled by Hodges & Hyde, LaCrosse, Wis., is operated by C. W. Green; and No. 4 by E. C. Gale, who represents W. W. Cargill & Bros. Brass & Graling employ Miles Winchell, C. W. Green, H. F. Griffin, E. C. Gale and Mr. Calkins. The Spring Valley market is the best in the county, pays the highest prices, and ships more wheat, corn, barley, etc., than any other town on the Southern Minnesota road."

Business on the New York canals is even better this year than was expected. From the opening in May more freight has been carried than last year, and at a greater profit. The increase in freight carried has been nearly 30 per cent. The increase is chiefly noticeable on east bound freight, though the prosperity applies also to west bound traffic. The rate on corn between Buffalo and New York has run from 4 to 4¼ cents a bushel this year. Last season it was from 4 to 4½. As the abolition of tolls reduced expenses about 1 cent a bushel, the net gain to the boatmen is ¾ of a cent a bushel and to grain men ¼ of a cent. Last season boatmen received from 65 to 75 cents a ton for up freight. Now they get $1 and there is more freight to go forward than was offered then. There is now much freight on the canals that could not be shipped at all last year.

## SHORTS.

The theory of fermentation is not yet settled. Pasteur says that the division of sugar into alcohol and carbonic acid is a concomitant of the vital processes of the yeast plant, and as a consequence, that the living yeast is indispensably necessary for alcoholic fermentation.

*

Pasteur says that if the spores of a yeast plant be sown on the surface of a fermentable liquid, the fungus grows and develops, absorbing oxygen from the air, and giving off carbonic acid without the production of alcohol.

*

The action of the acids of ferment is well known. They tend to liquefy the gluten and deprive it of its tenacity and elacticity.

*

Dough too far advanced in fermentation yields offensive products, both to the taste and smell, yielding buyric ether, and other offensive products. So says Horsford.

*

With time gluten dissolves in acetic acid, this being the foundation of determining the amount of gluten in flour. The gluten is dissolved away from the starch: the starch weighed by itself and the gluten determined from the specific gravity of the solution.

*

The Hungarian flour is of course intimately connected with the production of Vienna bread which is entirely free from acidity and all offensive odor. The reason is, because the gluten encased in its cells, not having been crushed is but slightly exposed to the action of yeast.

*

The introgeneous constituents owing to their protection within the cells, largely retain the integrity of their chemical constitution the tendency to elastic fermentation, where portions of the gluten are in solution, and as a consequence of the acidity liquefying the gluten and making the bread heavy, would be increased by the rupture of the gluten cells as in low milling.

*

After freeing wheat from foreign impurities it should undergo a gentle scouring, just enough to detatch the hairs from the ends of the berry.

*

When wheat is milled with buhrs it should always be ground high. The middlings should then be thoroughly graded, and each grade sent to a purifier adapted to it both in cloth and blast. The middlings should always be well dusted so that the purifier can remove nothing but light bran and speculae.

*

In friction gearing there is a movable bearing operated by a screw or lever which brings the pulley in contact with the driver, and the width of one from the other when detached is not over an eighth of an inch.

*

There is another advantage in friction gearing. There is always a jar in cog gearing no matter how accurately it may be constructed and this is avoided entirely by friction gearing because there is a continuous contact of the two surfaces and the wearing is equal all around the periphery of each pulley and an evenness and steadiness of motion is the result, and back lash is entirely done away with, as the influence of the prime motor is entirely severed by disengaging the driving pulley from the driven.

# Bain's International Telegraph Code.

## Compiled by HON. GEORGE BAIN, President of the National Millers' Association.

This Code has been prepared by Mr. Bain, after a long experience in the Export trade. It is believed that it meets all the requirements of a perfect Cable Code, enabling an offer or acceptance for any quantity of flour or grain to be made in a single word, and reducing the liability of mistake to a minimum. In its preparation the greatest care has been used to exclude all words of similar appearance and sound. This latter feature will be found of especial value to all millers and flour receivers whose messages are re-transmitted by telephone, from telegraph offices or over wires connecting offices situated some distance apart.

In order to guard against mistakes in transmission at receiving or sending stations, the further precaution has been taken to have the Code TWICE REVISED BY EXPERIENCED TELEGRAPHERS, who have eliminated all words bearing the slightest relation to each other in telegraphic character. For these reasons and for many others which will be at once apparent upon an examination of the Code book, the publisher believes he is justified in claiming for it the distinction of being

## The Most Perfect Cipher Code Yet Prepared

*For the Use of the Flour and Grain Trade.*

The spaces for brands of flour, etc. are left blank for the user to fill in as desired, thus preventing third parties making any use of information or copies of messages surreptitiously, obtained. Thus a the flour shippers in the largest city, though using the same code, are fully protected from the evils resulting from the unlawful disclosure or wrong delivery of messages, as in any but the right hands the message would be entirely unintelligible and useless.

The publisher solicits orders for sample copies, feeling confident that an examination of the Code will result in its general adoption.

C. M. PALMER, PUBLISHER,

*The Northwestern Miller Office, MINNEAPOLIS, MINN., U. S. A*

*Bound in Russia leather in form suitable for pocket. PRICE TWO DOLLARS PER COPY.*

---

**FOR A CHANGE,** *we here show you a cut of our* **Upper-Runner Portable Mills,** *which are also made double geared. In addition to these we make the boss line of Under-Runners, and if you wish to see cuts, descriptions, and prices of all, send for our* **X** *Price and Pattern List, which also shows up our fine line of*

**Pulleys, Shafting, Couplings, &c.,**

**AND GENERAL MILL MACHINERY.**

## WILLIAMS & ORTON MNFG. CO.,

P. O. BOX, 148. STERLING, ILL. P. O. BOX, 148.

*If you wish, we will send you our Illustrated Treatise on Wire Rope Transmission, which is a rapidly developing method of carrying power long distances.*

---

# Novelty Iron Works.

DUBUQUE, - - - - - IOWA.

MANUFACTURERS OF

## FLOUR MILL MACHINERY

AS A SPECIALTY.

*ESTES' PATENT*

**Automatic Steam Engine**

Plans, Specifications, and Machinery, according to *NEW PROCESS OR OLD,* made to order.

Agents for all kinds of Mill Machinery and Supplies.

MANUFACTURERS OF THE

**GROW & TYLER,**

## Convex Turbine Water Wheel

We guarantee our wheel to give satisfaction in every instance, when properly set, and stand in readiness if so desired, to test it with any other wheel; such test to be a laboring one, and the mill proprietors to have whole control of it, and of course to purchase the winning wheel. Write us for information and catalogue.

**NOVELTY IRON WORKS, Dubuque, Iowa.**

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# MORE OF THE SAME KIND AND BETTER THAN EVER.

*JAMESTOWN, Pa., June 13th, 1883.*

*CASE MFG. CO., Columbus, Ohio.*

*Gentlemen: We have now been operating the mill for some weeks and have got our flour well on the market, and we feel like saying to you (and you may use this letter as you please) that we are fully satisfied, and that you have done well by us. We are strong "Case System" men and believe you have the best milling machines and system now made. Our flour is first class, we ask for none better, and the machines work like daisies. We followed the flow of material exactly as given us by Mr. Case and have not changed one inch of cloth on any of the reels. You may send anybody here or refer anybody to us and we will tell them that if we had to do it over again we would have no other but your system. Yours truly, E. BRACKEN & CO.*

*Gentlemen: I wish to add to the above my testimony, that I never have seen the milling equaled that we are doing here. Your rolls are no trouble to run, and the feed is the nicest thing I ever saw. No roll made can compare feed with yours. I have no trouble watching or adjusting the rolls and in fact the mill runs itself. It takes the least power to run it too, of anything I ever saw. The mill is in all respects one of the best in this country, and no one is beating us in results. Our flour is just way up.*

*Yours truly J. M. SHERROD, Miller for E. Bracken & Co.*

Millers visiting Chicago are invited to call on WM. E. CATLIN & CO., 57 South Canal Street, our Agents there.

**CASE MANUFACTURING CO., Columbus, Ohio.**

### Bliss & Wood's Mill at Winfield, Kas.

One of the most profitable milling states, or one whose wheat has been ground at a round margin for two or more years past, seems to be Kansas. The wheat raised in this state, while not characterized by the qualities of hard spring wheat, is quite strong, of good color, and makes excellent flour. Moreover it is grown at comparatively small expense, and can be bought cheaply by the miller. Iowa and Illinois millers favorably situated as to transportation facilities have ground Kansas wheat at a profit, and Minneapolis millers have used it at times to advantage. In the case of the former we have heard of very heavy profits being rolled up. If mills thus remote can make money out of Kansas wheat, it is but reasonable to expect that home mills should do well. Mill men have been early to recognize the advantages held out by Kansas to the milling business, and the industry has already grown from the effects, but much greater things are promised in the future. We hear of mills being put up in all parts of the state, and they are usually good ones.

A Kansas mill recently built is that of Bliss & Wood, at Winfield. This mill has a somewhat remarkable history, the former mill having been set on fire by the book-keeper, Wm. H. Colgate, and destroyed on August 13, 1882. An account of the trial of Colgate for the crime, and his conviction and sentence appeared in our last issue. The rebuilding of the mill was commenced Sept. 12, same year, and was finished Jan. 18 following. The building is 40x60 feet, five stories (counting basement,) or 68 feet high, and is constructed of magnesian limestone. The old capacity was 200 barrels, but the new mill can make 400 barrels per day. Besides the driving machinery, there is most of the cleaning machinery in the basement, consisting of a Barnard & Leas separator, Eureka smutter, and Victor brush. On the first floor are 17 sets of 9x18 Allis-Gray rolls, 3 Barnard & Leas packers; on the second floor, 5 No. 2 Smith purifiers, 2 four-reel bolting chests, and flour and offal bins; and on the third floor the machinery is the same as in the story below. On the fourth floor are 4 Martin centrifugal reels, 1 eight-foot grading reel, 5 scalpers, and a Hughes bran duster. The purifiers are fitted up with Kirk & Fender dust catchers, there being 10 in all. The total number of silk reels in the mill is 17, all eight feet long. The mill uses steam and water power combined, in the case of the former, being driven by a 100 H. P. slide valve engine. The fuel used is in Kansas soft coal, which costs $4 per ton. The water power is furnished by the Walnut river. There is an elevator connected with the mill of a storage capacity of 50,000 bushels. Winter Fultz wheat is mostly used, four grades of flour being made at five reductions.

The mill was planned by Messrs. Fred M. Webber, the head miller, and Mr. J. S. Maus, the millwright who superintended the work, and the results from the start have been the most satisfactory. Only one accident occurred during the construction of the mill, W. G. Fuller, a millwright, having his leg broken by a fall. The mill finds a ready sale for all its products at home and in Texas and New Mexico, being much of the time behind orders. Mr. Webber, the head miller, was formerly of Minneapolis, and we are pleased to hear of his success and prosperity.

There is one other mill in Winfield, called the Tunnel mill, which has four runs of stone and does a custom business.

### Washing Wheat Before Milling.

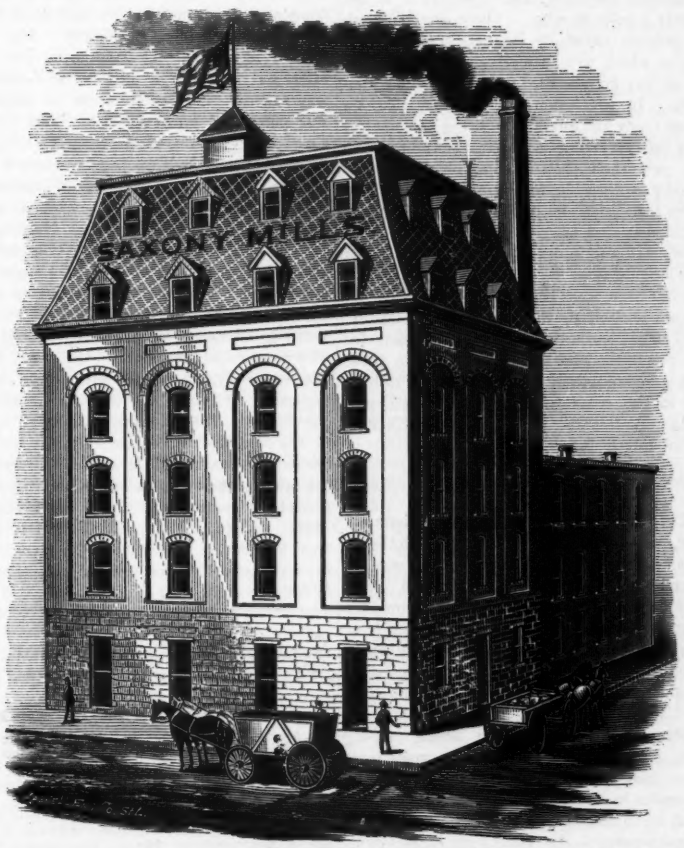
Referring to the above topic the *Allge. Muehlen und Maschinen Ind. Zeitung* says:

The washing of grain before milling, particularly in French mills, is frequently practiced, and flour made from such grain is of quite excellent quality, having great whiteness.

In spite of this fact the wetting of the grain is an operation not to be recommended, and for these reasons: washed and subsequently dried grain is hard to handle on rolls or stones, and makes in milling much bran and proportionally little middlings. The drying cannot be so thoroughly accomplished as to entirely harden the inner parts of the berry softened by washing. The dry shell will adhere to the still wet flour parts, and on milling a large amount of the finest bran will be present in the flour, damaging it, of course, in quality. If the washing is performed to improve grain which has kept badly, and become mouldy and musty, it will be found only partially effective, since while the outer part of the berry is cleaned and partially disinfected, the inner portions remain damaged as before. In addition, washing cannot be regarded favorably from an economic standpoint, because the consequent drying is accomplished for the most part with steam apparatus, involving much time and money. Thorough treatment by cleaning and decorticating machines is quite as effective if not more so than washing, which is in any case only superficial.

### The Saxony Mill, St. Louis.

The desire to change from buhrs to rolls, in order to meet the demands of the public for roller made flour is becoming more apparent every day. Old mills are being constantly remodeled and the latest improvement in roller milling is steadily superseding the millstone, and its concomitant machinery. The Saxony mill was first erected over thirty years ago.




It was burned down twice, and in 1876 a stock company was founded, and Ernest W. Leonhardt, and John F. Schuricht, became president and secretary respectively. The capacity of the mill is 500 barrels in a day of twenty-four hours. The contract for remodeling was given I. Q. Halteman & Co., of St. Louis, and satisfactory results have been obtained. W. B. Talley programmed the mill; A. V. Halteman had charge of the millwright work; and August Leonhardt, the head miller, superintended the prosecution of Mr. Talley's plans. The mill is built of brick, is six stories in height with mansard roof, and also has a fine basement. The motive power is furnished by a fine 250 H. P. slide valve engine. There are three boilers, 20 feet long, 48 inches diameter, with twelve 6-inch flues. The ground floor contains a fine line of shaftings for driving the rolls and other machinery. The rollers selected by the company are the Allis rolls, 34 pairs in Gray's patent noiseless frames. There are also three runs of 4-foot buhrs for middlings, and two Cook and two Phœnix flour packers. The third floor contains three Smith purifiers, two Case double machines, one Throop centrifugal, one 4-reel and one 2-reel scalping chest. On the fourth floor there are three No. 4 Smith purifiers and one 6-reel scalping chest. All of the Smith purifiers have Kirk & Fender "Peerless" dust catchers attached, six in all. On the fifth floor, there are three Schwab aspirators, one Throop brush for cleaning wheat, one Richmond brush, one Garden City brush, one Hughes and one United States bran duster, and one Silver Creek centrifugal reel. The machinery equipment is completed on the sixth floor, by one Affleck purifier, one Vandegrift wheat separator, one Vandegrift grader, suction fans, etc., for making separations in wheat. The bolting chests extend from the third to the fifth floor and consist of one 12-reel chest of 18 foot reels, one 10-reel chest, one 12-reel scalping chest for scalping breaks, and five single reel chests. Store rooms are located in the rear on second and third floors, and have a capacity of 5,000 barrels. The wheat is received from scales into sinks in the basement, then hoisted to a Vandegrift separator on the sixth floor, which has a capacity of 300 bushels per hour. From this separator it goes to the wheat bins, from which it is taken as wanted. The results obtained by the Saxony Mill Co. since their change to rolls have equaled their highest expectations, and they claim that their patent flour is far ahead of anything in the market. Their brands are: "Arbitrator," patent; "Saxony," fancy; "Crescent," straight; and "Gem," low grade. August F. Leonhardt is head miller; and assisting him as second in this department are Chas. Gillow and Preston Brickey.

This company boasts of an engineer who is quite a genius in his way; his name is Frank Gauss. This gentleman has invented and put together a small machine, which is attached to the engine and run by it, a "time register," which shows the number of hours run during the year. It also gauges the regularity with which the engine is being run, by a clock dial which is compared with an ordinary clock; besides revealing the number of revolutions of the engine in the year.

The building is quite large and there is another smaller one across the street belonging to the same company with a capacity of 175 barrels a day, which will be changed to a roller mill with a 200 barrel capacity during the present year. The company intend to use none but the most improved machines in their mills, so as to be able to turn out the best quality of flour. It is a healthy sign to see progressive men take hold of improvement in this way, and speaks well for the future of milling.

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The sheriff's sale at Sioux Falls, Dak,, of the Queen Bee mill chattles was set for Wednesday of next week.

F. B. Mills. S. S. Linton.
**MILLS & LINTON,**
**COMMISSION MERCHANTS**
And Dealers in Grain, Flour and Feed
Room 6, Chamber of Commerce Building, Minneapolis.
Special attention given to filling orders for choice milling wheat and best grades of Minnesota flour.
Having had a large experience in the milling business, we feel confident that we can fill all orders satisfactorily. Careful attention given to consignments.

**A. B. TAYLOR,**
**Wholesale Grain Dealer.**
Milling orders for round or car lots of hard or soft Spring Wheat promptly filled. Careful attention given to consignments Security Bank Building,
Minneapolis, Minn.

**J. J. BLACKMAN & CO.,**
**Commission Merchants.**
FLOUR EXCLUSIVELY.
**37 Water Street, New York.**
J. J. Blackman, J. S. Blackman.

**M. BERNATZ,**
**Flour, Grain and Feed**
COMMISSION MERCHANT.
Strong Minnesota Bakers' flour a specialty. Liberal advances made on consignments. Correspondence solicited. Reference—R. Patrick & Co., Bankers, Pittsburgh, Pa.
339 Liberty Street, PITTSBURGH, PA.

**EXPORT FLOUR TRADE!**
**Chas. J. HELLIWELL & CO.**
51, Chamber of Commerce Building,
MILWAUKEE, - - WISCONSIN,
(ESTABLISHED 1860.)
Mr. C. J. Helliwell, after a visit of several months to this country, has now returned to Liverpool, England, still better fitted than formerly to serve American Millers. The firm at Milwaukee will be pleased to receive samples and offers from millers, and to furnish any information in their power.

**J. D. EDGE,**
**Millwright and Draughtsman,**
*Dealer in Millfurnishings, Etc.*
Estimates cheerfully given on building new mills and repairing old ones. **Minneapolis, Minn.**

**A BARGAIN!**
The following machinery will be sold at a bargain: One 25-inch right hand turbine water wheel; 1 30-inch right hand turbine water wheel; 1 30-inch left hand turbine water wheel; 1 36-inch right hand turbine water wheel; 1 40-inch left hand turbine water wheel; 3 No. 5 Smith purifiers. This machinery is in excellent order and will be sold at a sacrifice. Address,
**PRAY MFG. CO.,**
*Minneapolis, Minn.*

**C. A. SELEY.**
CONSULTING ENGINEER.
Room 16, Drake Block, St. Paul, Minnesota.
I am prepared to contract for engineering work as follows: Furnish and set up power plants, complete or in part, set up machinery, pumps, water works, etc., and take charge of repairs.
Stationary, locomotive and marine engines indicated and adjusted for highest economy and work. Will conduct fuel and engine tests; design engines and special machinery. General draughting and engineering.
If you are burning too much fuel; if you wish to increase your power without great expense; if you wish power measured for renting or experiments; in short, any item of engineering work will be promptly attended to. Work done under guarantee when desired. Correspondence solicited.

CHEAPEST STEAM PUMP IN THE WORLD
IN EIGHT SIZES
THE UNIQUE
Boiler Feeder
STRICTLY FIRST CLASS IN EVERY RESPECT.
SEND FOR NEW & REDUCED PRICE LIST FREE ON APPLICATION
MANUFACTURED BY
THE MILLER COMPANY.
CANTON, OHIO.
Satisfaction Guaranteed or No Pay

# CORRESPONDENCE.

## Statement From Mr. Case.

*Editor Northwestern Miller:*

DEAR SIR: We wish to notice your editorial in the NORTHWESTERN MILLER of June 15th, in relation to the recent decision of the suit against the Case Mfg. Co., at the June term of the United States court at Columbus, in order that we may correct some inaccuracies to which you have probably been led by the statements from the Geo. T. Smith Co.

You say "that the decision very closely resembles the finding of a petit jury in an action for debt, as it split the difference between the contestants, affirming the validity of such of the Consolidated Co's. patents as were involved; George T. Smith's patents, and certain clauses of patents 164,050 and 136,101, and declaring the Case purifier no infringement of these patents."

In entering into the defense of this case we felt so assured that we did not infringe any of the Consolidated Co's. patents and were so confidently advised by our attorneys that this company could not make it appear that we were infringers, that we entered into the suit simply to defend our own patents and not to attack the validity of the patents of this company; hence it will appear that the validity of their patents has in no manner been tried. We did not feel that it was to our interest to be the Samson to break down the pillars of the temple that we might kill the Philistines and die under the same roof.

The decision of the judge in this case was simply to affirm that no man has a right to invade the claims of Smith so long as they remain untried and their validity undisputed, but in no manner can this decision of the two judges be construed as sustaining their patents, because the question of their validity was not before the court.

Now the statement that we were sued under only two patents is also inaccurate. They entered suit against us upon 43 separate and distinct claims. The testimony was taken voluminously upon all points at issue whereby one purifier may be construed to infringe upon another. That is, the contest was upon the brush and suction of air up through the cloth; the graded cloth; the sub-divided partitions; the tubular air discharge; the Guilder brush traveling from side to side; thus covering every point in the middlings purifier.

Col. Mason, on taking the floor, stated that all of the recent decisions in relation to reissued patents were against him, and that he could not hope to obtain a judgment or an injunction against us on tnese patents, and therefore would confine himself to the vital points at issue, those which he considered were clearly infringed and which he hoped to sustain. He made his long labored argument upon these points: The suctional air draft; the cloth cleaning device and the tubular air discharge. In relation to this tubular air discharge claim, Col. Mason made a labored effort to have this not heard in the courts here at Columbus, but wished to have it carried up to the highest courts without a hearing and without arguing.

The object of this cunning dodge was to enable this bull-dozing Smith Co. to herald it over the world, that their strongest claims had not been tried and that they would be carried up to the upper courts without arguing and without a hearing in the lower courts, and that unquestionably we infringed these claims, and that they would succceed in sustaining them in the upper courts, and thus continue their unhallowed work of intimidating the millers. This strategetic movement on the part of this attorney (Col. Mason) did not work.

Our attorneys demanded that inasmuch as we had been sued upon 43 separate and distinct claims, that the suit must be heard upon all these claims. It was so heard and the verdict rendered in our favor covering all those 43 claims.

What more the Smith Co. intend to bring up we are unable to conceive.

Considerable comment has been had by the milling papers at the quickness of the judge's decision, it having been given immediately, upon the closing of the argument, but if these editors had been in court and seen the clearness of the case and could readily comprehend as any intelligent judge could, the many shrewd and inconsistent positions taken by this prosecuting company in order to sustain their position, all of which were riddled into atoms by the arguments of our attorneys, and had seen the labored effort of their attorneys to build upon ideal and unnatural positions, they would not have been surprised that the judge decided the case before they left the bench.

There probably has never been a suit in which there has been so many positions taken, and so many advances and retrogressive movements, and so many contradictory statements upon the part of the witnesses, on the one hand, and such clear and unimpeachable testimony on the other as there was in this case.

In the other suit recently brought against us there are no new features.

As to the recent patents obtained by Geo. T. Smith upon bars for supporting the cloth of the screen, we know unquestionably that he has seen those bars in the screens used on fanning mills upon riddles for sifting corn meal, and upon every class and kind of screen from his boyhood up to the present time. We imagine that they will not be able to make very much capital out of this patent.

The millers should remember that to obtain a patent is one thing, and to sustain it in the courts is quite another. There are hundreds of patents issued by inexperienced assistant clerks, which are utterly valueless except so far as they may be used to bulldoze and intimidate. In conclusion we shall say that we stand ready and anxious to bring this matter to a final termination, and in the future, as in the past, shall press the matter forward as rapidly as possible, feeling well assured that there is no court in America that will give a decision against us.

We will also inform the milling public that this long delay in the final hearing of the case has not been occasioned by us in any way, but is due entirely to this bulldozing company, who have constantly sought some means for postponement and delay from time to time. We were anxious at any and all times to have the matter come to a hearing as soon as possible. J. M. CASE.

Columbus, June 18.

## Trade Literature.

The Clinton Wire Cloth Co. has issued a new and unique catalogue of wire cloths, in which several specimens of the wire is bound. The works of the Clinton Wire Cloth Co. are located at Clinton, Worcester county, Mass., and they have offices in New York, Chicago, and Boston. The cloth which is manufactured by this company is used for various purposes, and in the milling line it is used for fanning mills, threshing machines, millfurnishing, meal and flour sieves, scalping reels, etc., and the wire goods are made from brass, iron, copper, and steel, and the number of meshes in a square inch varies from a single mesh up to 40,000. The width covers all the requirements of the trade from six inches up to six feet. Samples of any kind of wire cloth will be sent by mail. Their wire bolting cloth is of first class quality, and all sizes are made and kept on hand. The following table will show the comparative sizes of meshes of the wire cloth and silk cloth:

| No. | | | | | No. | | | |
|---|---|---|---|---|---|---|---|---|
| 28 | Mesh | wire | cloth | equals | 00 | Anchor | bolting | cloth. |
| 30 | " | " | " | " | 0 | " | " | " |
| 36 | " | " | " | " | 1 | " | " | " |
| 50 | " | " | " | " | 2 | " | " | " |
| 54 | " | " | " | " | 3 | " | " | " |
| 60 | " | " | " | " | 4 | " | " | " |
| 64 | " | " | " | " | 5 | " | " | " |
| 70 | " | " | " | " | 6 | " | " | " |
| 80 | " | " | " | " | 7 | " | " | " |
| 90 | " | " | " | " | 8 | " | " | " |
| 100 | " | " | " | " | 9 | " | " | " |
| 110 | " | " | " | " | 10 | " | " | " |
| 120 | " | " | " | " | 11 | " | " | " |
| 125 | " | " | " | " | 12 | " | " | " |
| 130 | " | " | " | " | 13 | " | " | " |
| 150 | " | " | " | " | 14 | " | " | " |

This firm also manufactures sieve bottoms from "power loom" wire cloth, which is both perfect in mesh and has every particle of elasticity taken from the wire during the process of weaving, and this prevents any "sag" in the bottoms after being nailed on. This company has extensive works, employ a great many hands, and enjoy the reputation of doing very excellent work. Catalogues will be sent on application, from the northwestern office, 148 Lake st., Chicago, or from the works, Clinton, Mass.

# MFG. AND TRADE.

S. C. Buck, of this city, is furnishing the Crosby mill at Topeka, Kas., and the Petigrew mill at St. Olof, Dak., with conveyor flights.

Andrew Hunter & Co., of Chicago, report the following sales of machinery: D. L. Wing & Co., Litchfield, Ill., 5 centrifugal reels, 5 purifiers and 4 scalping machines; Middleport Flour Co., Middleport, O., 1 centrifugal; R. Bishop, McHenry, Ill., 1 centrifugal reel and 1 purifier; A. Hall & Co., Ahnapee, Wis., centrifugal reel; J. M. Replogle, Hagerstown, centrifugal reel; Silas Ireland, Dowagiac, Mich., centrifugal reel and purifier; Fitzsimmons & Kreider, Jacksonville, Ill., centrifugal reel; Henry Temple, Fenton, Mo., centrifugal reel; T. Querbach, Gillespie, Ill., centrifugal reel; Martin Sellhorn, Boone, Ia., 3 centrifugal reels; Ashenhurst, Roush & Co., Manchester, O., purifier; Jno. G. Dixon, Gratiot, Wis., purifier; A. N. Simcock, Williamsburg, Kas., purifier.

The Case Mfg. Co. furnish us with the following information regarding their recent suit: "The suit of the Smith Purifier Co., against the Case Mfg. Co. for infringement, in which the U. S. court decides there is no infringement, was one of more than usual interest to manufacturers generally. The very best of legal talent was employed on both sides, and a very large amount of testimony was taken. The examination of witnesses was conducted entirely for the Smith Co. by Col. Rodney Mason, of Washington D.C., and for the Case Co. by Col. Jas. Watson, of Columbus, O. Several volumes of testimony were taken. The arguments occupied three days, Col. Mason and Mr. Geo. Harding, of Philadelphia, appearing for the complainant and Col. Watson and Gen. M. D. Leggett for the defense. The case was argued from every conceivable standpoint, and listened to with untiring attention and patience by the judges who constituted the court. Col. Jas. Watson, especially, did himself great credit in his argument of three and a half hours for the defense. He had made a thorough study of the case, and was entirely familiar with all the patents bearing on the case as well as with the law and the facts, and when his strong and forcible argument was ended there seemed nothing left to be said in addition, and from that moment it was believed by all that the die was cast. Mr. Watson has placed himself in the very front rank of patent lawyers."

# SPECIAL NOTICES.


**OPEN FOR ENGAGEMENT.**

A first class miller, sober, industrious, reliable and up to the times. Best of references. Correspondence solicited. Address P. O. Box 27, Kossuth, Ia.

**A RARE CHANCE.**

A water power custom flour and saw mill, excellently located, for sale at a bargain. Address, N. W., care of NORTHWESTERN MILLER, Minneapolis, Minn.

**FOR SALE.**

Second hand engine for sale at a bargain. Cylinder 14x24, in excellent condition. Can deliver it immediately. For further information address BIRD, BRIDGE & Co., Warren, Jo Daviess Co., Ill.

**FOR SALE**

At half price of new, two of Jonathan Mills' degerminators; run only about 5 months, all perfect in every respect. Reason for selling, prefer rolls in place of them. UNION MILL CO., Waterloo, Ia.

**FOR SALE.**

Five run of four foot buhrs, and one extra runner, extra selected stock, dressed and in good running order with spindles, lighter, screws etc.; one 30½ inch Leffel turbine in perfect order; pair of smooth rolls. Address VICTOR, (this office.)

**MILL WANTED.**

Three or four run mill in the northwest (Minnesota or Dakota preferred) in good order, and with a good steady power. Send full particulars and lowest cash price, to M. H. W., office of the NORTHWESTERN MILLER, Minneapolis.

**ENGINE FOR SALE.**

A 10x30 Reynolds-Corliss engine, built by E. P. Allis & Co., steam pump, 40 H. P. flue boiler with boiler front, grates, etc., all complete. Has been been used but a short time, and everything is in first class order. Will sell cheap for cash. HASHOW, MAISH & DAVIS, Variety Iron Works, Minneapolis, Minn.

**FOR SALE.**

The Richfield mill, five miles south of Minneapolis, on Lyndale ave. Will sell whole or half interest, taking city property in part payment. Capacity of mill 60 to 70 bbls. Good water power; also pair 4-foot buhrs in good shape for sale. J. M. BAIRD & Co., Box 688, Minneapolis, Minn.

**WANTED.**

Young man two and one-half years as correspondent and amanuensis with one of the largest milling companies in this country, is open for engagement in a like capacity. Can give best references. Fully conversant with the export trade, and general routine office work. Address A. B., this office.

**SECOND HAND MACHINERY FOR SALE.**

Having changed our mill to the roller system, we have a lot of machinery (second hand) for sale cheap. Parties desirous of getting good bargains on some buhrs, separators, and smutters can obtain further information by addressing Wahpeton Mill and Ele. Co., Whapeton, Dak.

**FOR SALE.**

Saratoga mill at Waukesha, Wis., five runs of stones and all necessary cleaning and bolting machinery. Only mill in town, in center of village of 4,000 inhabitants, and surrounded by good grain growing and wealthy farming country. Shipping facilities unsurpassed, being on both the St. Paul and Northwestern railroads, good water power, and location the very best. Apply to C. A. BLODGETT, or B. BOORMAN, Waukesha, Wis.

**FOR SALE.**

A wind mill, tower 75 feet high, well built, together with all of the iron and nearly all of the woodwork belonging to a wind wheel 60 feet in diameter, shafting, belting, smutter, and nearly everything complete for a two-run flouring mill, is offered at a great bargain. For any one in need of this machinery it is a perfect bonanza. Address for particulars, ED. A. PASADIS, Plainview, Minn.

**WANTED.**

John T. Chapple, of Terre Haute, Ind., wants situation to take charge of good mill. Understands gradual reduction on rolls, or disc systems, or latest system on buhrs. Would take a position in good mill as second, or take a running interest in mill. Been a man of long experience, understand my business thoroughly. Good references if required, and would solicit correspondance from any one wanting a good miller. Strictly temperate. Address, JOHN T. CHAPPLE, 1304 Main St., Terre Haute, Ind.

**HINTS ON MILL BUILDING,**

By R. James Abernathy. The most modern book on milling. Three hundred octavo pages, fully illustrated, and containing full accounts of modern milling methods, together with many valuable tables and much useful information for mill owners, millers and millwrights. A book everyone interested in milling should have. Price $4. Sent postpaid on receipt of price, with one year's subscription to the NORTHWESTERN MILLER, $4. Address,

NORTHWESTERN MILLER,
Minneapolis, Minn.

**BOOKS WANTED.**

If you have any scientific, technical, reference or standard books, newspaper or magazine files, etc., suitable for a large general library which you want to dispose of for cash at a low price, send full description and price to the undersigned and you will receive a reply by return of mail. Old and rare, or modern engravings of merit are also wanted on the same terms. Address

LIBRARIAN,
Care NORTHWESTERN MILLER,
Minneapolis, Minn.

**WANTED.**

Steady situation by a practical miller—sober, industrious and reliable. Had 25 years' experience with millstones and rollers. Am competent to build, remodel and run any kind of flouring mill. Have built the mill I am working at present, and made it pay the outlay. Gilt-edged references from present employers. Good reason for wanting to change. Would not object to go with a millfurnishing house as traveling man. A good mill in Iowa preferred. Address "SLATER," NORTHWESTERN MILLER, Minneapolis, Minn.

**FOR SALE.**

Parties intending to build a mill read and think this over The entire machinery of an 80 barrel mill, as good as new, consisting of engine, 14x24 boiler, tubular 65 horse-power, 2 steam pumps, 2 power pumps, 3 runs of stones with all their gearing (bevel), 2 sets of rolls, 2 packers, 1 diamond dresser, 6 reels, 1 double Smith purifier, largest size made, 1 French purifier, 2 smutters, one brush scourer, rolling screen and magnets with two sets of scales and 24 picks, all gearing, shafting, and belting, large 200 bus. per hour corn sheller, and one small corn sheller. Everything in perfect order, and will be taken down carefully and put on cars for $3,000.

Address No. 9, care NORTHWESTERN MILLER.

**NEW MILL FOR RENT.**

A new four-run steam flouring mill for rent at low figures at Conway, Ia. No other mill within ten miles. The mill is complete from top to bottom. Basement, three stories and attic; 14x20 engine; boiler 54 inches by 14 feet. Iron husk frame, belt drive, two buhrs on wheat, one on middlings and one on corn. One smooth roll on cut-off from purifier, and a corrugated roll on bran. No. 3 smut purifier with dust catcher. Six 18-foot reels with double conveyors. Plenty of cleaners and exhaust fans. Flour packer. Four sets of scales. In short, the most complete and finest finished four-run mill in Iowa. None but a good miller, with means, need apply. Address C. A. Donnell & Co., Conway, Ia.

**NATIONAL MILLING EXCHANGE.**

We are making an exclusive business of the sale and exchange of mill property, and so far as we know are the only firm in the country giving entire time to this matter. Persistent, judicious advertising and vigilance, coupled with experience, give us facilities for finding buyers unequaled by any concern in the country. We offer the largest number of good chances in all the western states and Canadas, so that buyers looking for locations should consult us. Send for latest list of steam and water power mills for sale and exchange all over the west.

**J. M. MOORE, & CO.,**
**213 North Eighth Street, St. Louis.**

## Anglo-American and Swiss Scientific Milling.

BY CHRISTIAN WILHELM FRITSCH.*

In chapter 13, No. III, of this book, the process of grinding grain by stones is shortly referred to; attention is there called to the great influence exerted upon the process of grinding by the good or bad quality, and the sharpness of the millstones, and by the general management and handling of them.

In the present number, it is intended to discuss in detail the process of grinding wheat, which by far is the most important and extensive part of the milling business; and at the same time to describe the results of experience and the inventions of modern times.

For the furtherance of this, I deem it for the interest of the reader to select for discussion and instruction, the cylinder or roll invented and brought to practical completion by Mr. Sulzberger, a mechanic of Frauenfeld in Switzerland.

Its construction has hitherto been kept comparatively secret, but with that eagerness (so natural to man in unravelling matters of secrecy) an extraordinary zeal has manifested itself to become acquainted with this new device, and to utilize the same generally for milling purposes.

By roll mills are to be understood such mills, wherein instead of the hitherto customary millstones, cylinders or rolls, horizontally constructed, are employed, in order thereby to perform the process of crushing and grinding with considerably less consumption of power, and in a manner not less effectual.

In early times cylinders or rolls were used for crushing, breaking and pulverizing various substances and materials; yet they were not by far so extensively used as in our time. They are largely employed in a most manifold manner in a number of mechanical works and arts, and in the field alluded to they play an important part.

During the years 1820 to 1823 Helfenberger in Switzerland, Bollinger in Vienna, and Collier in Paris first conceived the idea of using such iron cylinders in the grinding of grain. However practical and useful such roll mills were found to be in crushing grain and malt, yet for many reasons they were little adapted to the purpose of manufacturing flour; wherefore the results of their exertions did not prove what was desired, and establishments of this kind very soon were abandoned, until 1835, when Sulzberger, the mechanic above mentioned, in Frauenfeld, in Switzerland, succeeded in perfecting roll mills, so that in almost every particular they answered all demands and yielded, above all other mills, soft, white, durable flour.

The spirit of speculation also, in this instance, extended its help to industry. The splendid success of Sulzberger's efforts caused to be organized in the place where Sulzberger resided, a society called the Frauenfeld society, bp whose assistance he was enabled to conduct the building of his mills on a more extensive scale. As a consequence hereof there may still be found at the present time, in many large places of this continent and abroad, roll mills after Sulzberger's system. The principal features of this system consist in the arrangement and construction of the rolls and their velocity.

In Sulzberger's mills three pairs of cylindrical rolls lie horizontally, one pair above the other, in a case, box or frame, called either the crushing mill (Schrotstuhl) or grinding mill (Mahlstuhl)as the same may be used in connection with the rest of the milling apparatus.

Collier mostly used conical rolls, which lay horizontally beside each other, so that the small periphery of the one was in contact with the large periphery of the other, and thus their axes were parallel with each other. Evidently by this arrangement two unequal circles were always in contact. He thereby sought to accomplish, what Sulzberger did by differential movements, viz., unequal velocity of friction surfaces, by means whereof the meal is not only crushed, but also, to some extent, triturated.

The advantages to be derived from roll mills consists chiefly in this, that in operating them a considerable saving of power is achieved, as compared with stone mills. Furthermore the flour produced is of excellent quality, both in whiteness and fineness.

Inasmuch as the wheat is ground in a dry state, the flour produced is especially adapted, with respect to durability, for transportation and storing.

Furthermore, in kneading, the flour absorbs more water than ordinary flour not ground in a dry state, and therefore appears to be more productive. Chemical analysis is said to have also shown that this flour (in comparison with other kinds of flour) contains 2½ per cent more nutriment, which however is very doubtful.

One defect about these mills, among others, is this: that with them the flouring is not completed; only the best inmost flour can be obtained, and the still flour-holding residue must be turned over to the ordinary stone mill for completion.

After prefacing these short remarks, I propose now to enter upon the description proper of the roll mill, first submitting, however, some suggestions upon the essentials of proper grinding of wheat.

In dealing with the manufacture of wheat flour, I intend to confine myself to modern improvements in milling only.

The principle, on which all said improvements turn, centres wholly and exclusively in a desire to effect the grinding of wheat, so that not only the largest possible quantity of good middlings flour is obtained, but also that this may be separated from the hull or bran in its original purity; or to express it in plainer words, to obtain the mealy interior substance without admixture of any part of the hull.

These two objects are the problem, the complete solution of which already in early times engaged thinking men. But it was reserved to the present, all overshadowing time to accomplish approximating results with mixed success. What in this direction has been done, and is now being accomplished, by construction of different model mills and machines is likely not unknown to most of my readers, wherefore we shall pass rapidly over its history and content ourselves with calling attention to what there is substantially and practically advantageous and with applying the same to general uses. So, to do even this much, would be difficult indeed, if one were content to judge by the outward glittering appearance of so many a new invention or improvement, when obstacles obstruct the way of looking to the bottom of things in their true light. I shall omit discussing the way of grinding wheat in general, in the ordinary way of grinding, as practised in different ways and with varying success, yet I cannot refrain from saying, on many of my professional travels, I had occasion to notice that the zeal to improve the art of milling here and there is quietly at work, and often leads to happy results, indeed.

Thus, among other things, I saw Vienna flour, produced in German mills, of such extraordinary whiteness, purity and fineness, that it proved not inferior to the best patent flour, and I also satisfied myself in some of the mills at Hanau, that, although the wheat was moistened but very little, it produced a product quite as excellent as Vienna flour.

That what is said above only applies to the better sorts of flour (Kenmeh) is self evident. In discussing our subject, I shall not omit to make some remarks upon the manipulations incident to flouring, as thereby the description of our roll mills, as hereafter given, will be more clearly understood.

The preparations necessary to a perfect grinding of wheat consist (as already remarked in former numbers of my contributions) principally in a most careful treatment of the grain, especially in cleaning the same and separating all useless and inferior admixtures as well as all impurities, which can be most effectually and thoroughly accomplished by means of my grain purifiers, which are peculiarly constructed and provided with wire brushing apparatus (manufactured in most excellent manner at my shop).

After so first preparing the grain, it must be ascertained whether it is moderately dried or very much; if the latter, it becomes absolutely necessary to sprinkle the wheat with a little water while constantly moving and intermingling it. This moistening is done for the purpose merely of making the shell or skin of the grain tough or leathery, so that (while crushing) the same be not pulverized alike with the floury substances and by bolting readily pass in middlings flour.

Although there is much declaiming from various sides against this moistening or mode of preparation, yet this course of treatment cannot be wholly avoided in grinding with stones. It is made more or less indispensable by one sort of wheat as against another. This often mentioned moistening or preparation is done to best effect as indicated in the second note, page 4, in my "Mehlfabrication," ("Flour Manufacturing").

The first treatment to which wheat is subjected, when beginning the process of grinding proper, is designated by the word breaking, or better, hulling. This must be begun when the wheat is externally so far dried that no more moisture is perceptible, which is mostly the case in from three to six hours.

The imparted moisture under these circumstances still is in the hull, and has not yet become absorbed by the dry interior or mealy substance. The absorbing, however, takes place rather quickly, if the proper time for crushing or hulling is not closely observed.

The details here submitted are beyond question of the greatest importance in said business, whether the same be carried on by means of German or American mills, for if good results are expected, the interior of the wheat kernels must be cleanly separated from the hull, as a consequence whereof the greatest quantity of middlings is obtained. And it is clearly apparent that to accomplish this end, the aforementioned various preparations, then the quality of the stones, the sharpening of the same, and finally the quality of the grain itself, are decisive.

The foregoing ends likely incited human invention to discover appropriate means for perfecting this separation of the cereals from the hull, or accomplishing it more advantageously without having first to moisten the grain.

This problem, Sulzberger (above all others) seems to have solved most effectually by the construction of his roller crushing mills.

After what has already been said we now pass over to second sub-division of the wheat flouring process. This also requires the attention of the miller, if he wishes to turn out something better than an ordinary grade of flour. First in this order is cleaning and sorting of grit (middlings).

In this second stage of the process of wheat flouring, the miller has also much occasion to display skill and work to advantage, in order to reach the results accomplished by several others. The distinguishing marks of a well-conducted crushing product are observable, not only in the thoroughly separated hull, but also in the middlings the latter ought to be of uniform fineness, granulous, vigorous, and to the touch somewhat sandy; they ought to contain few particles of the bran, and be free from flour. The manipulation, on the other hand, is defective, if the middlings are smeary, soft, mealy and susceptible of being formed into balls when pressed together in the hand; and finally, when many particles of grit remained united to the bran. Grit of the latter consistency is not adapted to the processes that are to follow, for no excellent flour can made out of it. When the middlings of the first, better sort, are seperated by bolting from the hull, then they are to be asserted by means of a simple separator in such a manner that at least four different grades of fineness are obtained, of which, however, the finest comprises by far the greatest part; this is also the cleanest, therefore the whitest; in one word, the best middlings.

Each of these grades of middlings is then separately transferred to a grit duster or purifier, in which all light bran particles are removed by means of an artificial current of air. The middlings, thus fully prepared, may be ground to completion upon hard, fine stones, and, when cylinder bolts covered with No. 10 silk cloth are used for bolting, yields a flour inferior to none. The varieties Nos. 2, 3 and 4 of the middlings are also in general first cleaned, then again transferred to the mill; the fine middlings are again separated and the grades of flour mingled together, as the same correspond with one another.

The fundamental principle on which roll milling is based lies in the solution of two problems, namely: 1. To accomplish much with little consumptive power. 2. To make the product, as near as possible, conform to the end in view. The object primarily is to grind the wheat in such a manner that the hull is almost separated from the core, as has already been remarked above. To this end stones are herein wholly done away with, and metallic implements only are used.

The rule already referred to, relative to systematic assortment and classification, are also applicable here. Special care must be bestowed upon the cleaning of the wheat, and altogether the best grain and wheat, that is not horney must be selected for flouring. For these mills, white wheat is the most favored.

The wheat prepared for grinding is brought to the cap or (according to milling phraseology) hopper by means of any kind of feeding spout. In this hopper is found a feed cylinder and an adjustable slide, whereby the apparatus may be so controlled that more or less wheat may be allowed to escape from the cylinder. The wheat, which runs out in a ribbon like stream as broad as the length of the rolls, is received by the first pair of rolls, and receives between these and the under layer (wedge) the first process of crushing or rough grinding; the rolls, six inches in length, have along their lengths teeth or plates, in average natural dimensions. The rolls revolve with unequal velocity, whereby in this first stage not only a tearing asunder and breaking of the grain takes place, but also a slight drawing out.

The kernels, thus to some extent already broken, now are made to follow the rotation of the rolls (the concave sides whereof are cut up rasp-like), and are thus carried through on both sides of the wedge. The product escapes on both sides, and is carried to the second, and from this to the third pair of rolls, by obliquely conducting boards.

One roll of each pair, as well as the wedge, is adjustable, so that the opening for the passage of the product can be made narrower or wider, as deemed best. The crushing or breaking surfaces must, however, never be allowed to touch each other.

The dentation or fluting of the lower pairs of rolls is of an increased fineness.

This, then, would be the way and manner in which the rough grinding process takes place by means of the roll mills of the system above referred to.

The rough ground product discharged from the mill (in which besides middlings, flour has been produced), is thereupon most conveniently carried into the proper stories of the mill building, by means of an elevator, and i then first transferred to a flour cylinder for the purpose of separating the flour. The remainder then goes upon a grit cylinder, where the material is assorted and separated from the hull in four different grades of middlings. The middlings thus obtained are thereupon likewise cleaned in the manner already described, and prepared for flouring.

The grinding of middlings takes place by a manipulation, varying but little from the process of rough grinding—by means of a flouring mill, which, together with the crushing mill, above mentioned, constitutes a set or run. Its construction is in the main like that of the other, only the difference that the upper pairs of rolls are not fluted but have smooth turned surfaces and consequently no underlays (wedges). This underlayer (wedge) is only used with the under pair of rolls, which are finely fluted.

The middlings ready for grinding are here also put into the hopper and carried to the first, second and third pairs of rolls in the manner described. The upper two pairs of rolls crush and triturate the middlings to the utmost degree, therefore it remains only for the last, lower pair of rolls to skake up the flour.

This product, thus finely ground, is now transferred to the cylinder bolt for separating the flour. The bran-like surplus is carried with the hulls to a stone mill, to be there completely ground out.

The grinding of middlings in the manner above described has many advantages in its favor, especially in this, that the bran particles, still contained in the middlings, are by this process not any longer decomposed or torn up; whereby the possibility of transfer of them into the flour is avoided.

* Dated Leipsic, 1847, and translated from the German for use in the suit of "Downton vs. The Yeager Milling Co.," at Washington, U. S. A.

## MFG. AND TRADE.

L. V. Rathbun, of Rochester, N. Y., lately ordered 2 Allis-Gray roller mills.

Morris & Dow, Stoughton, Wis., recently ordered 6 pairs of Allis-Gray rolls.

Jno. Schaab, of Papillion, Neb., has purchased two pairs of Allis-Gray rolls.

E. M. Hall is changing the mill of H. B. Hill, at Paxton, Ill., over to his system.

E. P. Greeley, Nashua, Ia., has ordered 4 pairs of Allis-Gray rolls from Allis & Co.

The Cascade Mfg. Co., of Northfield, Minn., recently put in an Allis-Gray roller mill.

Williams, Cargill & Fall, Houston, Minn., recently purchased an Allis-Gray roller mill.

H. D. Rush & Co., of Leavenworth, Kas., have ordered 4 Prinz dust collectors for their mill.

The Novelty Mill Co., of Parkersburg, W. Va., recently purchased an Allis-Gray set of rolls.

The Paige Mfg. Co., Painesville, O., furnish the machinery for the new elevator at Elgin, Dak.

The Case Mfg. Co., have the order of J. D. Green & Co., Faribault, Minn., for a double break machine.

S. H. Stout, of Covington, Ky., has filled an order for furnishings for H. B. Powell, of Shawaneetown, Ill.

The Case Mfg. Co., Columbus, O., have the order of R. A. Welch, Rome, Ga., for 1 double Case purifier.

E. M. Hall, of Danville, Ill., is furnishing Hiram Easton, of Ontario, Canada, with a set of plans on his system.

The Link Belt Machinery Co., Chicago, Ill., have ordered a line of breaks and purifiers from the Case Mfg. Co.

Edw. P. Allis & Co. have filled an order from Van Epps & Cox, Freemont, O., for 4 pairs of Allis-Gray rolls.

Edw. P. Allis & Co. have received an order from J. B. Issett, of Spruce Creek, Pa., for an Allis-Gray roller mill.

T. Hougaard, Mayfield, Utah, has placed his order for a complete two-run mill with the Great Western Mfg. Co.

M. & H. C. Allen, Grafton, Ill., will start their mill up in a short time on the Case system of gradual reduction.

The Case Mfg. Co., Columbus, O., have the order of W. T. Price, Hixton, Wis., for a Little Giant break machine.

The Elevator Milling Co., of Springfield, Ill., lately purchased 2 pairs of Wegmann's porcelain rolls in Gray frames.

J. S. Simpson, Knoxville, Ill., has placed his order with the Case Mfg. Co. for 2 pairs rolls with patent automatic feed.

The Case Mfg. Co. are furnishing Martin Sellhorn, Boone, Ia., with 4 pairs of Case rolls, with patent automatic feed.

R. K. Ailes & Co., Ann Arbor, Mich., will start up their mill in a few days on the Case system of gradual reduction.

The Case Mfg. Co., Columbus, O., are furnishing Wm. Deubel & Co., Ypsilanti, Mich., 2 double purifiers for their City mill.

The Case Mfg. Co. have the order of G. A. Hales, Elizabeth, Pa., for a combined break machine and scalper, making 3 separations.

The Acme Milling Co., Orleans, N. Y., recently placed their order with Allis & Co., of Milwaukee, for an Allis-Gray roller mill.

The Case Mfg. Co. have shipped I. B. Barrett & Son, Spring Valley, O., their patent automatic feed for 5 double sets of Odell and Allis rolls.

Edw. P. Allis & Co., of Milwaukee, lately received an order from F. W. Brickley, of Prairie du Rocher, Ill., for 8 pairs of Allis-Gray rolls.

The Queen City Milling Co., of Buffalo, N. Y., have placed an order for 4 large sized Prinz dust collectors with the Milwaukee Dust Collector Mfg. Co.

The Case Mfg. Co., Columbus, O., have the order of L. W. Taylor & Co., Mt. Pleasant, Ia., for a combined break and scalper, making three separations.

Koons & McAuliff, Garfield, Kas., are building a combined roller and buhr mill. The outfit is being furnished by the Great Western Mfg. Co., Leavenworth, Kas.

Fred Fishinger, Columbus, O., has contracted with Allis & Co., of Milwaukee, for one of their new 4-break machines, a Gray noiseless roller mill, and other machinery for his mill.

Robinson & Co., of Maysville, Ky., are about to put in their mill a large sized Prinz dust collector, and have placed their order for the same with the Milwaukee Dust Collector Mfg. Co.

N. Long & Co., Russellville, Ky., have contracted with the Pond Engineering Co., St. Louis, to apply the Jarvis furnace to their three boilers. The Sheffield grate bar will also be used.

The Case Mfg. Co. have been awarded the contract of D. Thomas & Son, Newark, O., for a complete line of breaks, rolls, purifiers, centrifugals, scalpers, etc., for a full gradual reduction mill.

John Guldner, of Prosper, Kas., has given his order to the Great Western Mfg. Co., of Leavenworth, Kas., for a two-run buhr mill, including a 40 horse power engine and 50 horse power boiler.

Ballard & Ballard, of Louisville, Ky., have placed an order with the Milwaukee Dust Collector Mfg. Co. for 6 dust collectors, to do away with the necessity for the old-fashioned and dangerous dust room.

The Case Mfg. Co., Columbus, O., have been awarded the contract of C. T. Johnson, Flora, Ill., for a full line of breaks, rolls, udrifiers, centrifugals, scalping reels, etc., for a full gradual reduction mill.

The branch house of E. P. Allis & Co. at San Francisco, Jno. R. Cross, manager, has been removed to the corner of Mission and First Sts., where they will have much better facilities for displaying machinery, and will keep on hand a full line of furnishings.

The Urban Mill Co., (Geo. Urban & Co.) of Buffalo, N. Y., has recently placed an order with the Milwaukee Dust Collector Mfg. Co., of Milwaukee, Wis., for a large sized Prinz dust collector, in addition to those being now successfully operated by them.

Among the millfurnishers who have ordered Prinz dust collectors of the Milwaukee Dust Collector Mfg. Co. during the past week are E. P. Allis & Co., Case Mfg. Co., Barney & Kilby, Stilwell & Bierce Mfg. Co. Garden City Millfurnishing Co., and others.

Joseph R. Gebhart & Son, Dayton, O., write: "We have run our Case mill for 3 months, stopping only for the want of wheat, our flour is giving splendid satisfaction, have not had a complaint, and are getting as much flour out of the wheat as any mill in Dayton."

John Roberts, of Harrison, Mon., has contracted with the Richmond City Mill Works for the complete outfit for a 2-run mill. He has a magnificent water power, and being a pioneer in the milling in the far northwest, will undoubtedly succeed.

White & Feather, Clark's, Pa., have decided to change their mill to the roller system, and after investigaing the different systems, they placed their order with the Case Mfg. Co., for a combined outfit of breaks, rolls, purifiers, scalpers, etc., for a gradual reduction mill on the Case system.

The Crescent Mill and Elevator Co., Denver, Colo., now rebuilding, will put in one additional boiler. All three boilers will then be set with the Jarvis furnace, the Pond Engineering Co., of St. Louis, having contracted to do the work. An inferior grade of slack coal is to be used in this furnace.

One of the most serious troubles a miller has to contend with is the liability of explosions in the old-fashioned dust room. The Prinz patent dust collector, manufactured by the Milwaukee Dust Collector Mfg. Co., obviates this, and gives perfect safety with thorough work, and is consequently being universally adopted. The miller's insurance is also much lightened by using these machines.

Carter & Stewart, whose oatmeal mill at Akron, O., was recently burned, have decided to build an oatmeal mill of 200 barrels capacity, at Peoria, Ill. H. Waters, of St. Paul, will superintend the work, and the Paige Mfg. Co., of Painesville, O., will furnish the machinery, including steam engine, boilers, etc. Mr. Waters is the same gentleman that built the well known Schumacher oatmeal mill at Akron.


—THE—

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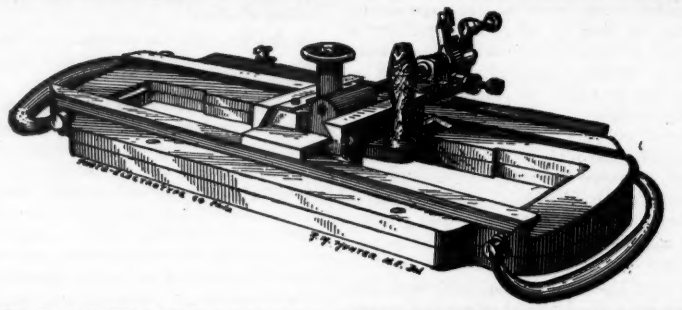

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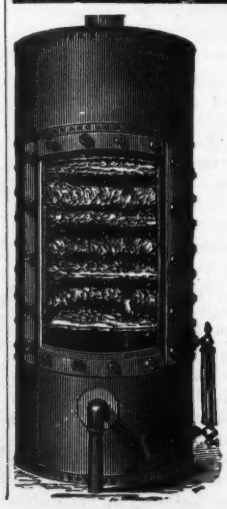

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## WHEAT HEATER!

***Thoroughly and properly toughens*** the bran on the ***hardest*** or ***driest*** wheat; heats the wheat ***evenly*** and improves the flour and milling generally, as no other Heater in the market does. Send for Circular.

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No seams to burst; no corners to catch or clog; "takes" easily and delivers promptly—not liable to carry down the back leg.

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Will outwear three or four hand-made buckets.

It meets the advanced ideas of the times successfully, and is nearer perfection in every respect than any other bucket made.

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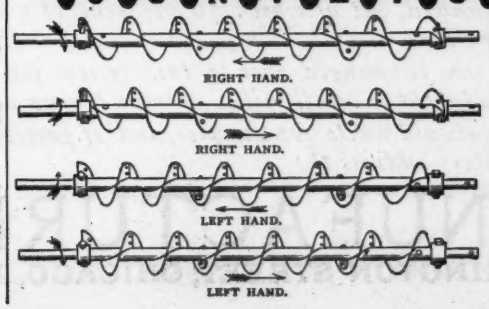


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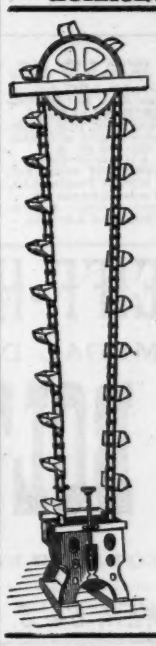

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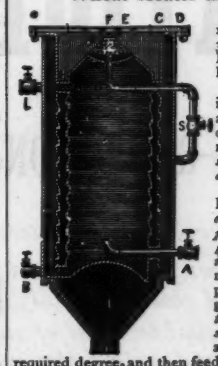
**Wheat Heater and Steamer.**




Patented Sept. 27, 1870. Re-issued Aug. 31, 1880. Re-issued May 17, 1881. Patented Feb. 28, 1882.

Millers please examine the 1st and 9th claims and then ask yourselves or attorneys if all other machines used for the *same purpose are not direct infringements.*

FIRST CLAIM.—The Improved Milling *Process* or *processes of preparing grain for grinding and feeding* it to a grinding mill, which consists in passing it by its own gravity *over or in contact with a heated surface,* thus drying and heating it to the required degree, and then feeding it to the *buhrs or rolls while still hot,* substantially as and for the purpose hereinbefore set forth.

NINTH CLAIM.—An apparatus for use as specified, grhich when suspended vertically is adapted to receive wain, and allow passage and discharge of same by its own gravity, and is provided with a chamber or chambers for receiving steam for the purpose of heating the grain as it passes in contact with the heated walls, as set forth. Address

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# MARKETS.

MINNEAPOLIS, June 27.

Lake markets opened stronger to-day, being ⅝@¾¢ above yesterday's close on wheat; ⅜¢ on corn, and ⅛¢ on oats. Wheat declined gradually until at 12 o'clock it was 1⅜¢ below the opening, and corn and oats were off ¼¢. The following were local quotations:

FLOUR—Patents, $6.50@6.90; straights, $5.50@6; clears, $5@5.50, low grades, $2.25@3.24.

WHEAT.—No. 1 hard spot, $1.08½; seller July, $1.09; seller, the year, $1.05; No. 2 hard, $1.04½; No. 1 northern, $1.04; No. 2 northern, 97¢; No. 3 northern, 94¢. Millers' Association prices: No. 1 hard, $1.09; No. 2 hard, $1.04; No. 1 regular, $1.02; No 2 regular, 99¢; No. 3 regular, 94¢.

MILLSTUFFS—Bran, in bulk, $6@6.25; sacked; 48.25. Shorts, $7 50@8 for coarse, and $8.50@9 for fine.

MILWAUKEE, June 27.

WHEAT—June, $1.00; July, $1.00½; August $1.03⅜; September, $1.05½.

CHICAGO, June 27.

WHEAT—June. $1.01⅝; July, $1.01; August, $1.04; September $1.05⅞; October, $1.07⅛; year, $1.01.

NEW YORK, June 27.

WHEAT—July, $1.14½; August, $1.17; September, $1.19; October, $1.21.

## Mark Lane Review.

LONDON, Jan. 29.—The Mark Lane *Express*, in its review of the British grain trade the past week, says: Trade in native wheat very bad; prices unaltered and supply small. Flour very dull. Foreign wheats very inanimate. Barley 3@6d cheaper. Trade in cargoes off coast nominal; 17 arrivals and 4 sales; 100 cargoes withdrawn, 4 remained. For wheat cargoes on passage or for shipment, scarcely any inquiry. Sales English wheat during week, 48,904 quarters, at 42s 5d per quarter, against 22,880 quarters, at 46s 11d, corresponding week last year.

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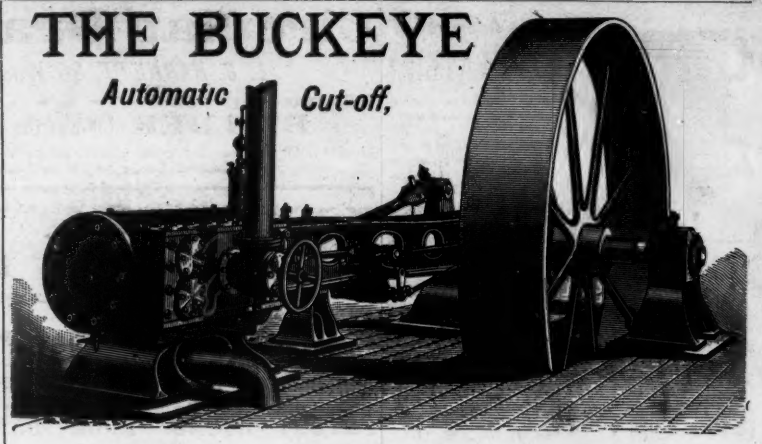

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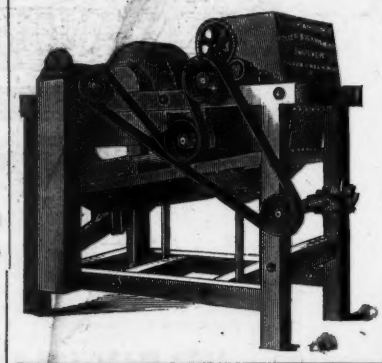

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